UNITED STATES OF AMERICA
NATIONAL TRANSPORTATION SAFETY BOARD
OFFICE OF MARINE SAFETY
QC

In the Matter of:	)	
	)	
MAJOR MARINE ACCIDENT	)	
COLLISION JAPANESE FISHERIES	)	NTSB Project ID
TRAINING VESSEL EHIME MARU	)	Number 51701
AND U.S. NAVY NUCLEAR ATTACK	)	DCA01MM022
SUBMARINE USS GREENEVILLE	)	

Friday,
February 16, 2001

Interview of FT1 Patrick T. Seacrest

Interviewers

THOMAS ROTH-ROFFY, Investigator
National Transportation Safety Board

BILL WOODY, Investigator
National Transportation Safety Board

BARRY STRAUCH, Investigator
National Transportation Safety Board

LT. CHARLIE JOHNSON
United States Coast Guard

LTJG. KEN KUSANO
United States Coast Guard

LT. COMMANDER RICK SANTOMAURO
United States Navy

LT. DOUG HEDRICK
United States Navy

COMMANDER JOHN CACCIVO
United States Navy

CAPTAIN TOM KYLE
United States Navy

P R O C E E D I N G S

MR. ROTH-ROFFY: Petty Officer Seacrest, good afternoon. My name is Tom ROTH-ROFFY, and I'm an investigator with the National Transportation Safety Board.

I and several other Safety Board investigators are here investigating the accident that occurred between the USS Greeneville and the Fishing Vessel Ehime Maru that occurred on February 9th, 2001.

Also joining in today's interview will be representatives from the United States Coast Guard and the United States Navy.

For your information, the National Transportation Safety Board is a federal agency responsible for investigating transportation accidents in the United States.

The purpose of the National Transportation Safety Board's investigation is to determine the cause of transportation accidents. In our investigation, we make no effort to assign blame to any person or party nor do we have any legal authority to penalize any person involved in the accident. Our investigation is strictly a safety investigation and not a legal investigation.

Upon the conclusion of our investigation, we issue safety recommendations aimed at prevention the occurrence of the accident again in the future.

If you desire, you may have another person assist you with this interview. Do you feel that you're able to get through the interview alone or do you -- would you -- do you think you need somebody to help you with it?

FT1 SEACREST: At this time, I think I can get through it all right.

MR. ROTH-ROFFY: Okay. With that, I'd like those seated at the table, who are participating in the interview, to go ahead and introduce themselves.

MR. WOODY: Okay. I'm Bill WOODY with the Safety Board.

MR. STRAUCH: I'm Barry STRAUCH with the NTSB.

LTJG. KUSANO: With the United States Coast Guard.

LT. JOHNSON: Lt. Charlie JOHNSON with the United States Coast Guard.

LT. COMMANDER SANTOMAURO: Lt. Commander Rick SANTOMAURO, United States Navy, SUBPAC, and the two other Navy participants that are not here, who will probably participate later on in the interview, are Lt.

Doug Hedrick from SUBPAC and Lt. Commander John CACCIVO, and also Captain Tom Kyle.

MR. ROTH-ROFFY: Thank you. So, at this time, what I'd like to do, Petty Officer Seacrest, is to think back to the morning of February 9th, Friday morning, and try to recollect your activities during that morning and into the afternoon.

What I'd like to do is, is try to visualize it. It might make it easier if you in your mind try to see the pictures and then vocalize what you're seeing. What I'd like you to do is give us as much detail as you can of your activities, what people told you, and what you may have told other people, and what you saw and what you heard, in again as much detail as you can, and I'd like you to go through your complete story from start to finish without interruption.

Afterwards, we'll ask you a few more detailed questions to kind of clarify what you may have said or to get additional information.

So, if you're ready?

FT1 SEACREST: How far do you want me to go to?

MR. ROTH-ROFFY: For a period of time after the collision. I don't know. You know, maybe we'll just stop you when -- when you -- when we think we've heard enough as far as, you know, the post-accident information.

FT1 SEACREST: Okay.

MR. ROTH-ROFFY: So, if you would, from the time you reported aboard the submarine on Friday morning?

FT1 SEACREST: Okay. Well, I came in in the morning about -- I guess I was there about 0500 in the morning, did our morning routine. We had quarters, had went to LPO's office. Then I had quarters with my guys. I had only two other FTs going underway with me. The rest of them were staying in port, to go to the trainers, and one guy had to take care of personal business. I wanted to make sure he was okay with what he needed to do, then I took the other two guys and went over with them what we were going to have to do that day and what was going to go on.

And we got the attack center ready to go underway. We have to break out radios and stuff like that for maneuvering and launching, get everything set up, and pretty much, we just waited around for the visitors to show up and -- and just stationed there, which happened at about 7:00,harness right around there. 7-7:15, right in there.

I was the line handler top side on Line 3. So, I went and put my harness on and stood by top side waiting till they ~~capped~~ cast the lines off, and my other FTs were down in the attack center getting ready to get underway.

We got underway around about 8:00, went down below, stowed my gear in the torpedo room and hung out in the torpedo room until they secured the maneuvering watch, and then I went back to shaft alley, had a cigarette, couple, and waited for lunch to roll around and take the watch at 11:30.

I took the watch at 11:30. Oh, then about -- I guess about 12:00, a little bit after that, had one of my guys come up. He gave me a quick smoke break, head break, took about five minutes, five-10 minutes, and then I came back in the control and was just standing by in control, tracking the contacts that we had and waiting for the next set of evolutions we were going to do, which were angles and dangles.

Had a couple of visitors come in the control room and ask me some questions about Fire Control and what I do and stuff like that.

I guess then at about -- right around 1, 1-ish, I think, I wasn't really keeping track of time, we started in on the angles and dangles, and then I guess we finished that. Finished our angles and dangles, I guess, 1:30, quarter till, right in that time frame, and at that time, the CO ordered the officer of the deck to make preparations to go to periscope depth and tells them to come around the course, change course, do our baffles clear, which we did.

I held two contacts at that time, picked up the third contact during the course change. We stayed on course, got to the Sonar about contacts, and we immediately changed course again, back to the left.

On coming back to the left, I heard the CO say he had a good feeling for the contacts, ordered the officer of the deck to go periscope depth. We went up to the officer of the deck, told the guy make it 6-0 feet, and we proceeded to periscope depth.

When we started going the periscope depth, I turned the periscope monitor on, which is right above one of my consoles, and I select those OSDS, which is how I read the bearings that the periscope's on. I selected for the Number 2 Scope because that was the scope we were on.

So, I watched the periscope the entire time the officer of the deck was going to PD. The scope breaks the water. He does his circle like he's

supposed to do, and he calls out no close contacts. The CO steps up on to the con. He takes the scope from the officer of the deck, and he does a 360, and then he looks down the bearings, the general area of the bearings the contacts are on that we hold.

After he does that, he calls away an emergency deep, lowers the scope. We go to ahead full cavitate. As we're coming down, they back it off to a head standard, and we proceed to 400 feet.

We get to 400 feet. We quickly station people where we want them to conduct the emergency blow, and the CO gets on the 1MC, and he tells everybody, "Hey, we're going to do an emergency blow", quickly explains what it is, and then we blow, and as we're blowing up, and as we're coming up, he's telling people, he's on the 1MC, saying what depth we are at, and he's calling the depths out, calling depth out, and then gets about 80 feet, and he says, "Okay. Now, the bow is out of the water." The bow will be out of the water, and right when we hit about 60 -- between 60 and 50 feet, right in there, he says, "Okay. Now, you'll be able to feel the submarine take a dip", you know, almost like a roller-coaster ride. It's you drop.

At that point, we never really felt that drop. We heard a loud bang, and then we heard another not-so-loud bang, you know, and it sounded like it was further away, and I heard this -- the captain said, "What was that noise?" He immediately went for the scope and raised the Number 1 scope at that time, and then the -- and he spun around real quick, and he said, "Oh, my God. We hit a fishing vessel. We hit a trawler. He's on this bearing." Right. And I can't remember if I called the bearing out or not. He's like, "He's on this bearing", and the officer of the deck had already raised up the Number 2 scope, and he had flipped perivis on. So, now I'm watching it in perivis, the whole thing, and you could see the fishing vessel floating, and initially, it looked okay. It didn't look like anything -- we knew we hit him, but he didn't look -- it didn't look like he was sinking at first.

Then we could see the aft port corner start to dip, and the waves start to come over the aft port, and then once that started, it went down quick. The aft port went, and the whole stern went, and then you could just see it drop in the water.

The whole time, as soon as the CO threw the scope up and saw that we hit a fishing vessel, he announced "This is the Commanding Officer. I have the

CON right away." He then took control over everything that was going on. He was barking the orders out. He radioed, broad 34 up, get on the -- on the -- I can't remember what it's called. The radio we have in the control room, the short band, I guess, the marine band radio, got on that, started making calls on that, got a hold of SUBPAC right away and started getting the -- on the 1MC right away, getting people moving, started breaking out all our man overboard gear and life rafts and all that stuff.

We immediately -- then we noticed that all the life rafts started deploying, and that people started getting in them, and at that time, they were draining the forward escape trunk. They already drained the lower hatch, and they were draining the upper hatch, but the upper hatch would never drain because the waves were taking it.

So, -- and in the same time, we were getting officer of the deck up into the bridge, which was the engineer, I believe, at that time. He was the one that went up to the bridge.

We get him up into the bridge, and they determined we can't open the forward escape trunk. If we do, we're going to flood ourselves out. We can't do that. So, we get the bridge ladder up into the bridge, and by the time we got the bridge ladder up, we had six -- six of our divers were standing by to dove up and out.

Our head diver, Master Chief, had rigged a harness, and the weight test lines we have for handling, he had rigged this rig to rig it around the broad 34. If we had to pull these guys out of the water, we didn't get them in the rafts, we could use the broad 34 and just pump it up and pull these guys straight up, so they wouldn't have to climb the ladder.

So, we had that rig already. They were ready to go, ready to use that, if we needed to. But it looked like that we didn't need to. After we noticed it, everybody was in their raft. We had one of the scope operators was keeping an eye on the raft.

The other scope operator was scanning the water to see if they had missed anybody, if there was anybody still floating in the water, and that's why our divers were standing by. In case that happened, we could send them out to go get them. So, we didn't see anybody floating around. They had picked them all up.

And after that, I just -- while that was going on, I was checking my console, my screen. I was like okay, what contacts do I have, and I went into

Sonar to see, to find out if this was one of the guys that we had hit, and they told me, "No. We still got him. We still have our three contacts." So, I said, "Okay."

So, the first thought that entered my mind is the guy was dead in the water, and we hit him. We didn't hear him, and we hit him. But -- so, I went back out, and I noticed that we still had the three initial ones. We didn't hold them for very long. We didn't hold all three of them for very long at all. They ended up fading out, and I don't know if they realized that it was actually one that I had contacted, but at the time, as far as I could tell, we still were tracking these three, and they assigned a new number to the fishing vessel. Thank you.

Now, once things settled down as much as they were going to, one of my FTs came up and relieved me, and I took about a two-hour break, two and a half-hour break before I came back up on watch and took it the rest of the evening.

MR. ROTH-ROFFY: Okay. I think that's pretty far enough in your narrative. I'd like to now go ahead and ask some more detailed questions, and then each interviewer will ask a series of questions, and then it will be passed to the next interviewer.

You mentioned that you had relieved the watch about 11:30. Who did you relieve?

FT1 SEACREST: Petty Officer Benkobic.

MR. ROTH-ROFFY: Could you spell that?

FT1 SEACREST: B-E-N-K-O-B-I-C.

MR. ROTH-ROFFY: Okay. Could you describe for us your responsibilities while you're standing watch at the Fire Control Station?

FT1 SEACREST: Responsible for tracking all contacts that are sent to me by Sonar --

MR. ROTH-ROFFY: And how do you -- how do you do that?

FT1 SEACREST: -- and visual contacts.

MR. ROTH-ROFFY: How do you go about doing -- track -- how do you track these contacts?

FT1 SEACREST: How do I track them? Sonar will gain them, assign a tracker to them, and that tracker, their system then sends bearings in the form of -- they're just little dots that show up on my screen.

I then manipulate -- I have four knobs on my console. One's for range, one's for bearing, one's for course and speed, and one is for time. And I take -- I don't ever mess with the bearing knob because the

bearing comes to me from fire -- from Sonar every 20 seconds.

I manipulate range, course and speed to align those dots as best I can to come up with solutions. Now, when you initially gain a contact, because we have no idea what this guy is doing, you -- I use what Sonar tells me. Initially, if they tell me it's a trawler or a merchant or a war ship or if maybe they just know it's a surface contact.

Based on what they tell me, it is the initial solution that I put in, but I always put in a closing solution, which means the contact -- there are different closing scenarios, but always the contact is pointing at us, coming at us, until I can prove otherwise, which is what I do for every one of my contacts, no matter what.

Now, the thing about the and these knobs, I can make the contact do whatever I want. I can make them 5,000 yards away. I can make them 25,000 yards away. I can make them go in five knots. I can make them go in 25 knots, and the bearings will stay the same. Okay. It's just the way our system works.

It needs -- our system needs bearing rates, a change in bearing rates, and usually a lot -- a few times, in order to refine that solution, to make it perfect, but we use, like I say, from Sonar, the Sonar systems, you know, getting bearing rates, and other things, SNR.

You can -- you can use this in order, depending on the environment of the water, the level of S&R, that kind of thing, to help make it better, but I always initially put in a closing, and depending on the contact, anywhere between 5 and 15 knots, whether it's a trawler or a merchant, and then ranges anywhere, usually pretty conservative, and usually anywhere between 8 and 10,000 yards away initially while we're tracking.

Then, as we change course, you can refine that better, to make it a little bit better, and you can change course again, you can make it even better, but the more you change course, the better it gets.

MR. ROTH-ROFFY: Could you talk more a little bit about what you mean by the more you change course, the better it gets, and how you're able to assess whether or not you have a good solution on the contact?

FT1 SEACREST: All right. Well, changing course will affect bearing rate, the rate of change, when you have a contact that sits on you, when you turn this way, his rate of change comes in and goes to the

left and vice versa to the right.

The best ideal situation is when you change course, you make a bearing rate change one way, and when you change course again, you come back the other way, you want his bearing rate to go the other way. All right. A left and then a right or a right and then a left, ideally

I can tell by my screen. Once I initially stack those bearing lines up, when we change course, if it's perfect, and I've put in the perfect solution, the bearing will fall right on the line, right? They'll just keep stacking straight. Okay. If it's not perfect, and it never is, it will start tracking -- you'll see the bearings start tracking off to the left or to the right. All right.

Well, my two time lines that I have, Time Line 1 at the bottom, Time Line 2 at the top, when I hit "enter", it centers the two, the earliest and the latest bearing rates, and then I adjust course and speed to remove that boat and line it back up as best I can.

Now, you have to understand that Sonar bearings that come into Fire Control don't always line up perfectly. You'll get a man, and they'll be scattered because bearings scatter. They'll be all over the place, you know, just bouncing back and forth all over the place.

So, then you have to pretty much judge what is the center of that -- that whole bearing mess in order to come up with that. As the signal and Sonar gets stronger, and my bearings get better, but then if it gets too strong, that trace on Sonar becomes so wide, that the tracker's just moving around in that, following that noise, and that -- and then it deteriorates again.

So, then it becomes experience really to start tracking these guys, and you have a lot of bearing scatter.

MR. ROTH-ROFFY: Prior to the collision, how many contacts were you watching?

FT1 SEACREST: I had 10 -- not 10 contacts. I had Sierra 10. I got -- they had skipped Sierra 11 for some reason, and I had Sierra 12, and I can't remember if I had Sierra 13 at that time or not. This was all before we just started the angles and dangles. I had -- I know I had Sierra 10 and Sierra 12, and I had Sierra 13. I had -- had -- we had lost Sierra 10 during the angles and dangles. He never came back.

I had 12 and 13 definitely when we started

the -- the initial baffle clear to come up to periscope depth. I already had those.

MR. ROTH-ROFFY: So, for those two contacts, Sierra 12 and Sierra 13, how confident were you in the solution that you had?

FT1 SEACREST: At the time? I was pretty comfortable.

MR. ROTH-ROFFY: Did -- did the ship maneuver to -- to do these bearing changes adequately or how did -- how did you arrive at the conclusion or the assessment that the solution was -- was pretty good?

FT1 SEACREST: Because we had -- during our angles and dangles, we also did a series of high-speed turns, which -- the other key thing is the change in bearing rate, is to do it as fast as possible. You want to maneuver your own ship as fast as possible. The faster you do it, the better off you are.

So, we were cruising around like this, you know, for a good four or five turns. So, that's why I was confident that we were tracking pretty good.

MR. ROTH-ROFFY: Did you maintain any kind of a manual plot of the contacts that you're keeping track of?

FT1 SEACREST: Do I manually track them?

MR. ROTH-ROFFY: No. Do you plot them somewhere?

FT1 SEACREST: We have a -- we normally have what's called a "contact evaluation plot", CEP. Do we? Yes. At that time, no. I had too many people in the way of the CEP that I couldn't get to it from the time we started the angles and dangles until the accident happened.

MR. ROTH-ROFFY: And who uses that CEP plot on the -- in the control room?

FT1 SEACREST: Mainly the officer of the deck.

MR. ROTH-ROFFY: Okay. That's about all I have for right now. I'd like to pass the questioning on to the next interviewer.

MR. WOODY: Bill WOODY from the NTSB. One of -- this is a strong -- you get strong dots when the targets have a very strong return. What do you do if you some big dots? Can you attenuate them or --

FT1 SEACREST: We can -- when the dots come in, right, and you hit a lot of bearing scatter, I can adjust the bearing different, from anywhere from -- when they get this strong, it's like two degrees to 16 degrees, but the higher you go, you know, the dots you'll see them, they'll be all scattered around. If I

go to 16 degrees, all of a sudden, they shrink in groups like that.

But when you shrink them in like that, you can't -- it's harder to detect what the contact is doing. Say the contact changes course. I won't see that. Whereby within a 4-degree a minute scale, I'll see the bearing, but at 16, the whole thing kind of shrinks, gets smaller.

So, we don't ever -- actually, my system will go up to 32 degrees. We don't ever track anything -- we don't change the bearing difference scale any higher than 8. It's not recommended to do it because you cannot detect what the target does or the contact is doing, because I can detect -- through bearings, I can detect speed changes or course changes just by watching my bearing dots, because if we're on steady course and speed, and I have a contact, and all of a sudden, his bearings start to ramp off to the right or to the left, either one of two things happen.

The Sonar tracker has tracked all of the contact and tracked on to something else. Sometimes they'll track on the biologic. If the biologics are louder, it'll track off on to the biologics, and they've got to readjust the tracker, or the contact maneuvered.

MR. WOODY: On that day, did you have any trouble with larger dots where they say the two contacts, the Sierra 12 and 13, were they becoming larger or range changing them?

FT1 SEACREST: That, I can't remember, to tell you the truth. I normally always keep it in 4 degrees, and I don't believe I had to change it that day.

MR. WOODY: Okay. The solutions you had at that time that you were pleased with for Sierra 12 and 13, what kind of a range and what kind of a course and speed did you have in the vessels?

FT1 SEACREST: The course?

MR. WOODY: Take the Sierra 12 first.

FT1 SEACREST: The course, I couldn't tell you. The ranges, I had anywhere between -- anywhere between 6 to 10,000 yards, from what I remember, and speeds roughly between 6 to 10 knots. Just being in Hawaiian waters, you know, the traffic around here, unless they call over with a merchant, and they hadn't designated any of them as merchants. So, they were probably trawlers, fishing vessels, pleasure crafts.

MR. WOODY: Of course, you've said that when the ship started doing the high-speed turns, that your

solutions held out. They didn't change to speak of. There was the bearings and track-off.

FT1 SEACREST: Oh, they had to be refined.

MR. WOODY: They did?

FT1 SEACREST: Yes.

MR. WOODY: What kind of time would you make for, say, Sierra 12 and then for Sierra 13?

FT1 SEACREST: That, I can't tell you. I don't remember.

MR. WOODY: Okay.

FT1 SEACREST: I just messed with the course and range, and I can't exactly tell you what -- how much I changed it or what changed.

MR. WOODY: Okay.

FT1 SEACREST: I don't remember.

MR. WOODY: How about -- what was the, if you recall, course for, say, Sierra 12? Do you recall? Any kind of idea of what course you had there?

FT1 SEACREST: No.

MR. WOODY: What kind of an angle on the bow did you have for the -- for the -- for the vessel?

FT1 SEACREST: No.

MR. WOODY: You had to drive to the right or to the left or --

FT1 SEACREST: The bearing rate was to the left.

MR. WOODY: The bearing for 13 was to the left?

FT1 SEACREST: Yes.

MR. WOODY: Now, what I'd like to do -- let's think back now. You -- the ship made an emergency deep, --

FT1 SEACREST: Hm-hmm.

MR. WOODY: -- and when -- during the time of the emergency deep, let's try to think about the same questions. During the emergency deep, when you leveled out before we had the emergency blow, think back to that time. What was the course and speed and range of these two contacts, if you can recall? Is there any kind of a record kept?

FT1 SEACREST: No. We don't keep -- you're talking about a fire control log?

MR. WOODY: Anything like that, right.

FT1 SEACREST: We don't keep fire control logs.

MR. WOODY: Okay.

FT1 SEACREST: Too cumbersome.

MR. WOODY: I can understand that perhaps. Is there any kind of an internal recording device that

would be recorded?
FT1 SEACREST: Our fire control system, no. We do have a Tac 3, which is a computer, it's on the Ethernet, that's hooked into our fire control system and Sonar, and that's got a recording device in it, but I don't believe it was running at the time, on ours anyway.
MR. WOODY: Okay. Now, -- okay.
FT1 SEACREST: Sonar, a part of their system has a recording device.
MR. WOODY: Okay. Now, to paraphrase something you said earlier, what I was gathering is about two choices or many choices. You have a contact at 10,000 yards doing 10 knots, let's say, with a starboard aspect.
FT1 SEACREST: Hm-hmm.
MR. WOODY: Or you have a contact at 5,000 yards doing 5 knots, and they would both have the same bearing rate.
FT1 SEACREST: Oh, yeah.
MR. WOODY: Right. So, in between this, there's an infinite number of solutions.
FT1 SEACREST: Oh, yeah.
MR. WOODY: Did you get any kind of input from anywhere that would help you to refine the solutions that were tracking?
FT1 SEACREST: No. The only input I would ever get is from Sonar. That's it.
MR. WOODY: And what would you get from Sonar?
FT1 SEACREST: They might -- they can look and look at one of their displays and tell me if it has a closing or an opening interference pattern.
MR. WOODY: Closing or an opening interference pattern?
FT1 SEACREST: Right.
MR. WOODY: Okay.
FT1 SEACREST: If the -- if the contact is coming in strong enough, they can see that opening or closing interference pattern.
MR. WOODY: Okay.
FT1 SEACREST: And I believe at the time, the Sonar super told me they had opening interference patterns.
MR. WOODY: Okay.
FT1 SEACREST: But I left them in a closing solution because I don't -- the interference pattern thing is not 100 percent.
MR. WOODY: Hm-hmm. Did they at any time

give you an estimated range, based on the angle of the reception of the signal from, say, the bottom?

FT1 SEACREST: Oh, you mean like a bottom bounce?

MR. WOODY: That's what I'm speaking of, yes. I wasn't using the right terminology, but thank you for the help.

Did they give you a range based on that?

FT1 SEACREST: No.

MR. WOODY: Did Sonar ever give you any type of a range estimate?

FT1 SEACREST: No, because really the only kind of range estimate they can give me, bottom bounce range, they have the towed array deployed. We didn't have the towed array deployed.

MR. WOODY: All right.

FT1 SEACREST: So.

MR. WOODY: When you do have solutions that appear to be tracking the system with the input from Sonar, what do you call that? Do you recall that a tracking solution or do you have another name for it or do you have a name for it?

FT1 SEACREST: No, not really.

MR. WOODY: Okay. Had -- had the officer of the deck or the commanding officer agreed that you couldn't -- with your problems of keeping that CEP plot, had they acknowledged that or agreed that you didn't have to do that?

FT1 SEACREST: No. No, they didn't.

MR. WOODY: Did they realize, for example, that you were not doing that?

FT1 SEACREST: Well, I can't say that. I don't know if they realized it or not.

MR. WOODY: Was it a decision you made or somebody else made not to keep the plot up?

FT1 SEACREST: That would be me because it's my watch station, and I wasn't able to get to it.

MR. WOODY: Did you make any kind of a complaining report to anybody to say I can't do this function any longer because of the crowd? I hope you know that. Did you have any kind of conversation along those lines?

FT1 SEACREST: Not that I recall, no.

MR. WOODY: What does the OOD have to look at to help him keep track of the Sonar picture?

FT1 SEACREST: What does he have to look at? The ASVDU.

MR. WOODY: And was it working that day?

FT1 SEACREST: No.

MR. WOODY: It was not working?
FT1 SEACREST: No. Apparently it had broken during maneuvers.
MR. WOODY: During the maneuvering watch. Would that cause you to have any greater urgency or need to talk to him about the -- keeping the plot up?
FT1 SEACREST: Not necessarily.
MR. WOODY: Would there be any other source of information, besides verbal reports from Sonar, that would help -- help the OOD to keep track of the situation? Did he have anything else he could look at or do?
FT1 SEACREST: Other than Fire Control? No.
MR. WOODY: Okay. On your contacts with Sierra 12 and 13, can you think back about how long you held those contacts?
FT1 SEACREST: I don't know the actual time. I just know I held them for -- I held them for quite some time. About --
MR. WOODY: Half an hour?
FT1 SEACREST: -- 30-40 minutes.
MR. WOODY: 30-40 minutes?
FT1 SEACREST: Yeah.
MR. WOODY: I realize this is based on your memory, and 30-40 minutes of contact at, say, 10,000 yards closing, would you expect to be getting closer? Did that cause you to readjust your solution any way? Just the fact that they're getting closer and should be there or --
FT1 SEACREST: To readjust them just because they're getting closer?
MR. WOODY: Hm-hmm.
FT1 SEACREST: No.
MR. WOODY: Okay.
FT1 SEACREST: I would readjust them based on the bearings coming in.
MR. WOODY: On bearings coming in?
FT1 SEACREST: Yeah. That's how I -- just because the contact's walking in on me, but his bearings are falling in, I have to assume --
MR. WOODY: Now, --
FT1 SEACREST: -- that's what he's doing.
MR. WOODY: Now, during high-speed maneuvering, rudder changes, rudder course changes, you'd have high bearing rates, but you wouldn't have them for very long.
FT1 SEACREST: No, you wouldn't, and sometimes we would hold the contact and sometimes we wouldn't. So, it wasn't 100 percent tracked on the

contacts during that whole time.
MR. WOODY: In your experience as a Fire Control and running this equipment, how long would you like to see the ship, say, change course to get a bearing drift so that you could see a number of dots appear, so you were able to have a better feel for it?
In other words, make it short and sweet, what would you like to see in the way of time if a ship changes course for bearing change?
FT1 SEACREST: Well, three to four times is usually pretty good.
MR. WOODY: Three to four minutes is pretty good?
FT1 SEACREST: Yeah. You can -- if you change them, if he's going to -- his bearing rates are going to change, you'll see it within the first couple of minutes. So, yes, three-four minutes is good. Enough data to go ahead and make the next change.
MR. WOODY: Just take a hypothetical situation here by supposing that your target is showing you a starboard aspect, similar, say, of, oh, starboard 45 angle of bow, let's say starboard 30, and it's off the port side of your submarine, off your port beam. You've got to get certain bearing drift, and you come up with a certain solution in your -- in your equipment.
Then the vessel's reversed course and is going exactly the opposite direction, and the sound is -- your bearing is not coming off the starboard side of the submarine. You get quite a different change in bearing -- bearing rate.
FT1 SEACREST: Are you talking about he changed?
MR. WOODY: No, no. This is in the context that it's not changed. Assuming he's giving you something like starboard 30 angle on the bow, and you have a solution in your equipment that's -- that's tracking pretty well, consistent with the bearings from combat
-- I mean from Sonar.
FT1 SEACREST: Hm-hmm.
MR. WOODY: The -- and then the ship has changed, reversed course to give you a different bearing rate. If your solution were not correct, would that be evident right away?
FT1 SEACREST: Yeah. It would be evident right away, depending on how -- yeah. It could be.
MR. WOODY: It could be?
FT1 SEACREST: It could be. It depends on

how close I was at the time. If I was closer than what he was actually doing, then it may just change a little bit.

MR. WOODY: A little bit.

FT1 SEACREST: If I was way out to lunch, then it would change a lot.

MR. WOODY: Okay. That was the kind of question I was -- thank you for helping me. I think that's all the questions I have at this time.

MR. STRAUCH: I'm Barry STRAUCH. I'm just going to ask some follow-up questions.

You said you did not do the CEP because of -- there were civilians or there were people around you who you said were civilians?

FT1 SEACREST: Yeah. They were civilians.

MR. STRAUCH: Okay. And how did their presence prevent you from plotting the CEP?

FT1 SEACREST: Well, there was about seven of them standing right there.

MR. STRAUCH: So, in other words, they were blocking access?

FT1 SEACREST: Yes, they were blocking access to the CEP.

MR. STRAUCH: Okay. Now, you had gone out with civilians before?

FT1 SEACREST: Many, many times.

MR. STRAUCH: Okay. Was there anything different about their presence this time from their presence all the other times?

FT1 SEACREST: No.

MR. STRAUCH: Had they blocked access before?

FT1 SEACREST: Yes.

MR. STRAUCH: Many times?

FT1 SEACREST: Yes. Every time.

MR. STRAUCH: Every time?

FT1 SEACREST: Yes.

MR. STRAUCH: The fact that you were unable to plot the CEP, how did that affect your job?

FT1 SEACREST: My job?

MR. STRAUCH: Yeah.

FT1 SEACREST: It doesn't affect my job.

MR. STRAUCH: Then why do you plot it?

FT1 SEACREST: For the officer of the deck. I do not need the CEP to do my job.

MR. STRAUCH: In other words, it affected his job?

FT1 SEACREST: Yes. Yes and no. He uses it as a quick look to see which way the contacts are going. The CEP will show you the bearing rate, zero

right/left. I have that on Fire Control, the same thing. I have a computer display of it there.

MR. STRAUCH: Okay. So, is it fair to say that without the CEP, his awareness of what was going on was reduced, but for you, it made no difference?

FT1 SEACREST: Yes, that would be fair.

MR. STRAUCH: Okay. And the reason you do the CEP is for him and not for you?

FT1 SEACREST: Correct.

MR. STRAUCH: You said that when the perivis went up, you -- you have the ability to view what basically the periscope is displaying?

FT1 SEACREST: Yes, I do.

MR. STRAUCH: Okay. Did you look at the perivis the whole time?

FT1 SEACREST: Yes, the entire time.

MR. STRAUCH: Did you look at anything else during that time?

FT1 SEACREST: Anything else? When the CO was looking down the bearings, glancing over at the OSDS, I have perivis here, and I have the OSDS right here, and I glanced at the OSDS, looked at the bearings, and look at the perivis because I knew the bearings generally in my head were up to the northeast, in that general area.

So, I was just making sure he was in that area when he was looking at them.

MR. STRAUCH: And was he?

FT1 SEACREST: Yes.

MR. STRAUCH: Own ship data?

FT1 SEACREST: Own ship data display. It displays all kinds of things throughout the boat, and one of them is -- I can select it to display bearings from certain pieces of equipment on board, and one of those -- both of them being the periscope display.

MR. STRAUCH: Excuse me while I run the electronics here.

(Pause)

MR. STRAUCH: Well, when you looked into the perivis, what did you see?

FT1 SEACREST: Nothing but wave swells.

MR. STRAUCH: Okay. Have you thought about it since the accident?

FT1 SEACREST: Yes, a lot.

MR. STRAUCH: Okay. Tell us about it. What were you thinking after that?

FT1 SEACREST: What was I thinking about looking at the perivis and after the whole accident?

MR. STRAUCH: Yes.

FT1 SEACREST: How we missed them.
MR. STRAUCH: Okay. Because it wasn't just you who missed it, somebody else missed it, too?
FT1 SEACREST: Yes.
MR. STRAUCH: And what does that tell you? What did you -- what did you figure out after all this time you've spent thinking about it?
FT1 SEACREST: Maybe we didn't look long enough.
MR. STRAUCH: But you looked, and he looked, and you looked independently of each other, and you both missed it.
FT1 SEACREST: Yes.
MR. STRAUCH: Has that ever happened before?
FT1 SEACREST: In my career?
MR. STRAUCH: Yes.
FT1 SEACREST: Yes. When the sea state is like that, yes, it's easy.
MR. STRAUCH: It's easy?
FT1 SEACREST: Yeah.
MR. STRAUCH: It's easy to miss targets when the sea state reaches a certain -- a certain point?
FT1 SEACREST: Oh, yeah. You've got to figure there's only so many feet of scope sticking out of the water. It's not --
MR. STRAUCH: Okay.
FT1 SEACREST: It's not that uncommon.
MR. STRAUCH: How much of the sea state does it take?
FT1 SEACREST: Probably - depending on the height of the swells is two foot. Four.
MR. STRAUCH: Anywhere from two to four foot swells?
FT1 SEACREST: No. The sea state's four.
MR. STRAUCH: Okay.
FT1 SEACREST: Four to six foot swells. You could lose a ship easily in that with three-four feet of scope sticking out of the water.
MR. STRAUCH: What was the sea state at the time of the accident?
FT1 SEACREST: I would say it was greater than three.
MR. STRAUCH: So, when the sea state is greater than three, how much confidence do you have in the perivis accuracy?
FT1 SEACREST: The perivis -- the periscope?
MR. STRAUCH: Yes.
FT1 SEACREST: Depends on who's looking at it. That's my confidence in it. Everybody is

different. I could stick a junior guy on that scope or you could put me on that scope, and I will see things that he won't.

MR. STRAUCH: So, it's a function not only of the sea state but also the -- of the person looking through it?

FT1 SEACREST: Experience.

MR. STRAUCH: And with your experience, you missed it?

FT1 SEACREST: I wasn't actually looking up the periscope either. I was just looking at a TV screen that's about this big.

MR. STRAUCH: Well, how different is what the TV screen is displaying versus what the person looking up the periscope is seeing?

FT1 SEACREST: It's different. It's a black and white screen for one. The field of view that the operator has and the field of view I see on the TV are reduced.

MR. STRAUCH: Okay. But it sounds to me if the sea state reaches a certain point, no matter what the experience level or what the field of view or what the color of the display is, it's still going to be inaccurate, is that correct?

FT1 SEACREST: No.

MR. STRAUCH: Okay. How is that incorrect?

FT1 SEACREST: Would you repeat that again for me?

MR. STRAUCH: If the sea state reaches a certain point, no matter what the experience of the person, the field of view or the color of the display, the accuracy of the display will be reduced, is that correct?

FT1 SEACREST: His field of view will be reduced?

MR. STRAUCH: Yes. The accuracy of what you're seeing.

FT1 SEACREST: Oh, what I'm seeing on the perivis?

MR. STRAUCH: Yes, that is correct.

FT1 SEACREST: Yes.

LT. HEDRICK: This is Lt. Hedrick. That would be an opinion of FT1 Seacrest.

CDR CACCIVO: Actually that's not true. Could you ask that question again? I don't think I understand it.

MR. STRAUCH: Okay. The question is referring to the accuracy of what is displayed on the perivis, and what Petty Officer Seacrest said, as I

interpreted it, is that if the sea state reaches a certain point, the accuracy of what's displayed goes down.

FT1 SEACREST: No, no.

MR. ROTH-ROFFY: This is Tom ROTH-ROFFY. I think we're kind of tripping over the term "accuracy". It's maybe the acuity of the -- of -- of the site you're seeing or, you know, the ability to detect contacts might be reduced, but accuracy -- I mean, there's -- there's no numbers, you know, with an error, plus or minus error.

LT. COMMANDER SANTOMAURO: Tom, if I could give you a technical thing on the light, the amount of light? This is Lt. Commander SANTOMAURO.

The -- with the perivis, that perivis is activated. There's a percentage of the light, the beveled light that's coming through the periscope to the perivis monitor itself, and that's 40 percent, basically, and it can vary between different ships, but the state of the technical thing is about 40 percent of available light with perivis and 60 percent with the eye piece when the perivis is activated.

MR. ROTH-ROFFY: The eye piece of the periscope?

LT. COMMANDER SANTOMAURO: Right. The eye piece of the periscope. The officer of the deck is looking through the periscope. Available light.

LT. HEDRICK: Lt. Hedrick. Light is diverted from the periscope optics to support the perivis. It is the same amount of light coming through the optics on the -- on the upper end of the scope. The light is split in the scope tube to allow some for perivis and some for the operator. It's a -- that's -- that's a close explanation.

I'd like to add another couple details. As far as -- I believe Beth Seacrest said something about it being a little bit harder to look at the perivis or better to look at the scope. I equate that to I've used my video camera to tape stuff, and I've had no problem watching what I was taping through the view-finder of the video camera, only to have people, including myself, watch it later on the TV and think it was jerky and hard to follow, and I think there's something about when you're on the scope, and you know when you're about to turn the scope in azimuth or elevation, it's a little bit easier for you to have some feel of continuity than when you see that same jerkiness in the perivis, and you're not the guy who's causing it.

So, I think the best comparison would be the video tape thing. So, if you can think about that and the number of times maybe you've seen a video tape that looked a little jerky on the TV.

As far as accuracy, yes, it's harder to see stuff in a higher sea state, and it might require you to look for a longer period of time in each quadrant or each bearing line as the ship rides up and down with the waves, so you can get a clear line of sight, but as far as what you're seeing at any one time, it's -- I mean, that's what you're seeing. It could be waves, if the ship is in a trough between waves, or it could be you've ridden the swell, and now you are well above and actually able to see for a brief period of time till you go back down between swells again farther than you normally would on a clear sea, although remember the other ship is riding in the swells, too.

So, if it's a small ship, farther away, it becomes easier to steer larger ships and, of course, ships being closer, it's much harder to lose them in the swell.

CDR CACCIVO: But if what we meant to say here was that the ability of the operator to visualize contacts or to evaluate what was available in the perivis or in the optics of the scope to see was impaired, we understand that, but the -- assessing the accuracy of what's available would not be impacted by those conditions.

The accuracy of what's out there would not be impacted, would not be fair to say that's affected.

MR. STRAUCH: Okay. Well, I actually have a better understanding now of what's going on, and I have to explain that I may be the only person at this table who's never taken an engineering course, but, yes, my -- the focus of my question is not so much on the data that's being displayed so much as it is the human's interpretation of that data, and that is -- that is what I'm trying to focus on.

Okay. I won't bother to ask you to repeat the answer to my question because I'm not sure that I could even ask the question again.

You said that at one point, they couldn't open the hatch after the accident. Is that -- is that what you said?

FT1 SEACREST: The forward escape trunk.

MR. STRAUCH: Yeah. Okay.

FT1 SEACREST: Not couldn't, wouldn't.

MR. STRAUCH: Wouldn't. And why was the reason?

FT1 SEACREST: Because we were taking waves over the top of the aft deck. If we were to open that, we would have flooded ourselves out.
MR. STRAUCH: Okay.
FT1 SEACREST: It's a big hole.
MR. STRAUCH: Okay. How long have you been in the Navy?
FT1 SEACREST: Almost 14 years.
MR. STRAUCH: All your career has been on submarines?
FT1 SEACREST: Yes.
MR. STRAUCH: And all of your career in submarines has been on basically what you're doing now at different levels?
FT1 SEACREST: My first submarine, I came into the Navy as a striker. So, my first two years on board my first submarine, I was striking to be FT, and it was undesignated at the time.
MR. STRAUCH: Okay.
FT1 SEACREST: It wasn't until I hit my third year that I went to school and then went to my second submarine after that.
MR. STRAUCH: Okay. You said you've been out with civilians lots of times?
FT1 SEACREST: Yes.
MR. STRAUCH: And you're referring to your 14-year career in the Navy?
FT1 SEACREST: Yes.
MR. STRAUCH: What's different about how things are done on board when there are civilians versus when there aren't, where it's just you guys?
FT1 SEACREST: Different about how we operate?
MR. STRAUCH: Hm-hmm.
FT1 SEACREST: Nothing. We still do everything like we do.
MR. STRAUCH: Okay.
FT1 SEACREST: Yes, we still do everything like we normally do, if we were just taking us going out to sea.
MR. STRAUCH: Okay. But you said that you don't complete the -- weren't able to complete the CEP.
FT1 SEACREST: The CEP.
MR. STRAUCH: So, there is at least one thing that's different?
FT1 SEACREST: Well, there was one thing.
MR. STRAUCH: Nothing else?
FT1 SEACREST: For me? No. I cannot say that for the rest of the boat. For what I do or

whatever watch I'm standing at that time, which happened to be as FTOW at this time around, that would be the one thing that -- that would be the one thing that, yeah, doesn't get done.

MR. STRAUCH: What about briefings?

FT1 SEACREST: As far as before the evolution?

MR. STRAUCH: Are briefings done differently with civilians on board than when civilians aren't on board?

FT1 SEACREST: Hmm. Well, being qualified for watch as I am, I know that the ship's control party briefed the emergency blow between the ship's control party. It's standard that we always do that before we do any type of evolution. The ship's control party will brief that, and normally the officer of the deck will be standing right there. I don't know if he was standing there that time when they briefed, but I know at that time, they briefed it before we did the angles and dangles.

Before the control room got actually filled with people, we held that.

MR. STRAUCH: So, to your knowledge, the briefings were done the same this time as they've always been done?

FT1 SEACREST: Yes.

MR. STRAUCH: Okay. Now, the civilians were all -- were -- how many civilians, do you estimate, were in the control room at the time?

FT1 SEACREST: Between 12 and 14.

MR. STRAUCH: Okay. And since I'm not familiar with your vessel, were you in the control room at this time?

FT1 SEACREST: Yes.

MR. STRAUCH: Okay. So, between 12 and 14 civilians were there with you?

FT1 SEACREST: Yes.

MR. STRAUCH: And were the same number of military people in the control room as you would expect?

FT1 SEACREST: Maybe a couple extras.

MR. STRAUCH: So, the control room, how crowded was it?

FT1 SEACREST: It was pretty crowded, especially my side of it.

MR. STRAUCH: Were people able to get to things? Other people? Because we know you couldn't get to the CEP.

FT1 SEACREST: Normally, as far as the

control room goes, I'm the one who actually has to move around the most to get things done, and that's really just to go to the CEP, update the CEP. Other than that, I never have to leave my console to do anything.

The quarter master never has to leave his plots. The -- you know, keep officer's track. The ship's control party never leaves where they're at, and then it's officer of the deck just walking around the control room.

MR. STRAUCH: Was there any one person, when the civilians were there in the control, who was responsible for coordinating things with them, explaining to them and keeping them away from things?

FT1 SEACREST: Any one person?

MR. STRAUCH: Yes.

FT1 SEACREST: Not that I know of.

MR. STRAUCH: Okay. What were civilians doing at the time of the -- of the event?

FT1 SEACREST: At the time of the emergency blow?

MR. STRAUCH: Yes.

FT1 SEACREST: They were standing, holding on to stuff. Holding on to the stanchions and whatever else they could grab on to to help stay up.

MR. STRAUCH: Were they talking?

FT1 SEACREST: Yes, I believe so.

MR. STRAUCH: Most of them talking? Few of them talking? Most of them?

FT1 SEACREST: The noise level in control wasn't that high. So, they were talking amongst themselves mainly.

MR. STRAUCH: Okay. Were they in front of anything? Were they standing in front of dials, displays?

FT1 SEACREST: They were standing in front of Fire Control.

MR. STRAUCH: Okay. But they weren't all there? I mean, some of them were standing in front of other things, too, I presume?

FT1 SEACREST: Well, when I was sitting at my console, and I turned around, my console is on the -- the consoles are on the starboard side, and we have the two periscopes, and it kind of wraps up around the front like that, and our ICP sits right in the front. So, visitors were all here and all along that one periscope.

MR. ROTH-ROFFY: Pardon me. This is Tom ROTH-ROFFY. Could we have you make a sketch of that, just for the record, on a sheet of paper? It's kind of

hard to translate these hand movements on to --

CDR CACCIVO: Would it be possible to get you guys to get the PAO to bring back the sketch we drew? We could just post it in here and make it a lot easier for you guys.

MR. ROTH-ROFFY: Which sketch are you referring to?

CDR CACCIVO: Drew detailed sketches of the control room for NTSB on an easel down there in the conference room. Could we bring those back out tomorrow? This is a couple of times now, and it's very confusing, and I just think it would make it easier for you.

MR. ROTH-ROFFY: Yeah. I don't -- where are those sketches? I'm sorry.

CDR CACCIVO: On that easel in the conference room, the first two pages.

MR. ROTH-ROFFY: Okay. I -- sometimes -- I guess I missed them somehow, but that would be helpful. That would be helpful.

MR. STRAUCH: Well, the only -- what I'm getting at really is -- is that they were interfering with other people's movements.

CDR CACCIVO: Oh, I know what you're getting at, and -- and there's been several times where it would be convenient to have these diagrams. I'm just saying I provided the diagrams, but I'd just like to -- rather than slowing down the process or having me personally have to draw them again, if we could just grab the ones tonight that are out there, pack them up and bring them out here. We're going to be out here for the next two days.

MR. ROTH-ROFFY: Yes, I think that's a very good suggestion.

CDR CACCIVO: Okay. ..... managed not to use them. So.

FT1 SEACREST: Okay. Basically, this is what the attack center looks like. This is just my side of the control. Okay. These are all my consoles here, and they're all Mark 81s, every single one of these. They all perform the same functions, and this here is OSDS. It sits up higher. My perivis monitor is right here.

MR. ROTH-ROFFY: Could you label those, please?

FT1 SEACREST: Sure.

MR. ROTH-ROFFY: This is Tom ROTH-ROFFY. Does anybody need a break at this time or do you want

to press forward? Petty Officer Seacrest, are you all right to continue or do you need a break?

FT1 SEACREST: I actually need to use the head real quick.

MR. ROTH-ROFFY: Okay. Let's go ahead and take a break. It's now 1549.

(Whereupon, a recess was taken.)

MR. ROTH-ROFFY: Okay. The time is now about 1600, and we're resuming our interview with Petty Officer Seacrest.

MR. STRAUCH: Okay. This is Barry STRAUCH, and when we left, Petty Officer Seacrest was explaining where the civilians were located in the control room, and he was diagramming the control room and labeling the different elements of the control room. So, why don't we continue?

FT1 SEACREST: Okay. Like I was saying, this is pretty much my area, which we call the attack center. These are my consoles, Mark 81s, my displays. Then you have the command launch console where we launch the weapons. There's a bookshelf here, and then the Tac 3 is aft all the way back in the corner.

Okay. The Number 1 and Number 2 periscopes, and what we call the con, which is a raised, about two-inch/two and a half-inch raised platform in the middle of the control room, and the Mark 19 plotters in the back of the control room where the quarter master stands, which would be right here.

My CEP plotter is right here. The forward door to the control room is right next to it, here and here, and then you have, I guess, -- you have the SCP right here, the ship's control panel, and then the BCP here.

The civilians were standing in this general area right here, here and around here.

MR. STRAUCH: Was their presence -- how did their presence affect the use of Scope Number 1?

FT1 SEACREST: You wouldn't have been able to use Scope Number 1.

MR. STRAUCH: Because of their presence?

FT1 SEACREST: Right.

MR. STRAUCH: Is that why they used Scope Number 2?

FT1 SEACREST: We always use Scope Number 2 always. It's the only scope that has perivis. This scope has no built-in camera.

MR. STRAUCH: Okay.

FT1 SEACREST: It's an old periscope.

MR. STRAUCH: What are the other differences

between the two scopes?
FT1 SEACREST: This has all the electronics in it, ESM, the video camera, the built-in still camera, perivis.
LT. COMMANDER SANTOMAURO: This is Lt. Commander SANTOMAURO. Let me clarify that to Number 2 periscope will have the electronic countermeasure sensors in it, and without raising that one, you wouldn't be able to glean any radars that might be out there. Number 1 scope does not have that, that capability.
FT1 SEACREST: Yeah. This is considered an attack periscope. The top of this one is back -- to the top of the Number 1 scope is very thin. This one's higher than this one.
MR. STRAUCH: Hm-hmm. Okay. You said after the collision, you looked at the perivis, and then you saw the fishing vessel?
FT1 SEACREST: Yes.
MR. STRAUCH: But the sea state hadn't changed?
FT1 SEACREST: No.
MR. STRAUCH: Why do you think you were able to see the vessel after the collision?
FT1 SEACREST: Because he was within 500 yards of us. We had just hit the guy. He was right off our starboard, I believe it was our starboard side. He was right there.
MR. STRAUCH: Okay. How -- what was the elapsed time between the last -- the last time -- well, between the time the periscope went up and you were able to look at the perivis, and the time that you saw it again after the collision? How much time had elapsed?
FT1 SEACREST: The time the periscope went up?
MR. STRAUCH: In other words, what was the difference in time between the first time you looked at the perivis before the collision and then the time you looked at it afterwards?
FT1 SEACREST: Oh, that would be when we went down to 400 feet and then looked. So, I'd say about -- between seven and 10 minutes.
MR. STRAUCH: Okay. So, the reason you were able to see in your opinion the second time was because he was right on top of you, you had just hit him, and he was real close?
FT1 SEACREST: Right.
MR. STRAUCH: The reason you weren't able to

see him the first time was because the sea state and presumably he wasn't as close?

FT1 SEACREST: Yes.

MR. STRAUCH: Okay. And this is some of the things that you thought about since?

FT1 SEACREST: Yes.

MR. STRAUCH: Okay. Do they allow smoking on board the vessel?

FT1 SEACREST: They do.

MR. STRAUCH: They do? Okay.

FT1 SEACREST: Only during certain hours.

MR. STRAUCH: Okay. So, was that -- so, you smoke on board the vessel during those hours?

FT1 SEACREST: Hm-hmm.

MR. STRAUCH: How many packs a day do you smoke, if I may ask?

FT1 SEACREST: Out at sea?

MR. STRAUCH: Hm-hmm.

FT1 SEACREST: Maybe a pack every three days.

MR. STRAUCH: Okay. And on land?

FT1 SEACREST: Maybe a pack every day and a half --

MR. STRAUCH: Okay.

FT1 SEACREST: -- two days.

MR. STRAUCH: Okay. I don't have any more questions. Thank you.

FT1 SEACREST: Hm-hmm.

LT. HEDRICK: Lt. Hedrick. Just something we had discussed with some of the previous interviewers. We had mentioned some of the things that were entered in the logs that might help clarify Barry's last question.

Approximately five minutes elapsed in the quarter master's log between the order to make depth 400 feet and the collision, and that's a manually-kept time log, feed data from the three tapes which will provide ship's course speed and depth every second for the duration of this event, and that should help narrow that down even -- even more.

Another difference in being able to look through the scope and see a contact is the periscope depth. The ship's depth was somewhere between 60 and 55 feet, depending upon the people we've interviewed, and at the emergency blow, the ship was in a broached condition, and it is probably about 15 feet higher in the water. The ship had surfaced, whereas the periscope depth is not. So, big difference in how far the scope is above the sea state.

Questions for you, Petty Officer Seacrest,

and somebody -- if one of these was already asked, please stop me. I don't want to take the time to ask questions over again.

The periscope depth. Do you normally record perivis on the Greeneville?

FT1 SEACREST: No.

LT. HEDRICK: No? Only during certain situations?

FT1 SEACREST: Yes.

LT. HEDRICK: Okay. And in general terms, what kind of situations would those be? General meaning unclassified.

FT1 SEACREST: During missions.

LT. HEDRICK: During missions. Okay. Earlier, you said, discussing the preparations and proceeding to periscope depth, you said the CO told the OOD to make preps for periscope depth. You also said something about the CO told the OOD to clear baffles.

Did the CO, in your -- do you recall if the CO told him to clear baffles, clear baffles in a certain direction, tell him to order up the specific course? Do you remember any of that?

FT1 SEACREST: Yes. He -- he drove the whole evolution, the commanding officer did. He told the officer of the deck to come to this course. We did.

LT. HEDRICK: Okay.

FT1 SEACREST: When he got the report from Sonar, he immediately told him to come back.

LT. HEDRICK: What report from Sonar would that be?

FT1 SEACREST: That would be the -- the standard contact report, the contacts we held.

LT. HEDRICK: Okay.

FT1 SEACREST: Once he got that report, he immediately told him to come back around.

LT. HEDRICK: Okay. How about any dialogue about the actual order to -- to take the ship to periscope depth?

FT1 SEACREST: Yes. As we were coming back around, we never made it to the ordered course.

LT. HEDRICK: So, coming back around, this would be after the course that was, I think, 1-2-0, as you're coming back to 3-4-0 or something.

FT1 SEACREST: Yes.

LT. HEDRICK: What exactly was said?

FT1 SEACREST: "If you have a good feel for the contact picture, officer of the deck proceed to periscope depth."

LT. HEDRICK: Okay. And then the officer of

the deck is the one who gave the order and chose the order depth?

FT1 SEACREST: Yes.

LT. HEDRICK: Okay. Once again, this will probably be provided by the Tac 3 data, once that's available, but how long do you think the ship was actually at periscope depth before the emergency beep was called out?

FT1 SEACREST: Not long.

LT. HEDRICK: Not long?

FT1 SEACREST: No.

LT. HEDRICK: Does not long mean 15 seconds, couple minutes, five minutes, 10 minutes?

FT1 SEACREST: I'd say less than --

LT. HEDRICK: Not sure?

FT1 SEACREST: Less than a couple minutes.

LT. HEDRICK: Okay. How long have you stood FTOW on the Greeneville?

FT1 SEACREST: Since May of last year.

LT. HEDRICK: Since May of last year, and do you have previous at-sea experience standing FTOW?

FT1 SEACREST: Yes, on three other submarines.

LT. HEDRICK: On three other submarines. Do you feel pretty comfortable in that you understand purpose, intent and the thought methodology of a baffle clear?

FT1 SEACREST: Yes.

LT. HEDRICK: Do you think an adequate baffle clear was performed on February 9th?

FT1 SEACREST: Yes.

LT. HEDRICK: Do you happen to recall if -- you stated the officer of the deck told the dive to make the depth 6-0 feet, we're coming up to periscope depth, and we've also said that at one point, the captain took the scope and ordered up the emergency beep.

Do you recall if there were any orders for depth changes?

FT1 SEACREST: Yeah. The CO ordered a higher look.

LT. HEDRICK: Did he request something or tell the officer of the deck to do something or did the CO order a depth?

FT1 SEACREST: He ordered 58 feet.

LT. HEDRICK: Okay. And was that an order that was mimicked by the officer of the deck to the dive or did the dive just respond to the CO?

FT1 SEACREST: No. The officer of the deck

mimicked that.
LT. HEDRICK: Okay. Is it standard practice on the Greeneville to maintain the CEP plot underway?
FT1 SEACREST: Yes.
LT. HEDRICK: The -- does the CEP plot contain information, other than contact bearing at different times?
FT1 SEACREST: It would contain any information we get from Sonar on the classification.
LT. HEDRICK: Okay. So, things like a -- well, why don't you tell me? What -- give me a few of those things that --
FT1 SEACREST: Things like if they classified it as a trawler, a merchant, I put that on there. RPM blades.
LT. HEDRICK: What -- what previously in this room, we've referred to as screw blade configuration and turn count?
FT1 SEACREST: Yes.
LT. HEDRICK: Okay. The contact -- the bearings to the contact at different times, is that information available in Fire Control?
FT1 SEACREST: Can you extract it now?
LT. HEDRICK: No. I mean, at -- at that time.
FT1 SEACREST: Where they gained bearings to Fire Control?
LT. HEDRICK: Is the information -- the CEP is the summary of all the contacts, what their bearings were at different times, correct, --
FT1 SEACREST: Right.
LT. HEDRICK: -- as well as the other information you said you annotated and the ship's position or course?
FT1 SEACREST: Right.
LT. HEDRICK: In Fire Control, is the -- do you have the CEP-type mode in Fire Control?
FT1 SEACREST: Yes.
LT. HEDRICK: Okay. And what information does the Fire Control CEP display?
FT1 SEACREST: Bearing rate.
LT. HEDRICK: Bearing rate. So, it is the variance contacts and the bearings that they're on?
FT1 SEACREST: Right.
LT. HEDRICK: Does it display -- can you annotate those other things, the turn counts and classifications?
FT1 SEACREST: No.
LT. HEDRICK: No. Does it show own ship's

course?
FT1 SEACREST: No.
LT. HEDRICK: But it does show all the contact bearing information?
FT1 SEACREST: Right.
LT. HEDRICK: Okay. Is it possible for you to call that up on one of your screens while you do your other Fire Control analysis on the different stack?
FT1 SEACREST: Yes.
LT. HEDRICK: Have you ever seen officers of the decks utilize the time-bearing mode or CEP mode in Fire Control for that purpose?
FT1 SEACREST: Yes.
LT. HEDRICK: Was that called up on one of your stacks on --
FT1 SEACREST: Yes.
LT. HEDRICK: -- February 9th? It was? Why was it? Was that a choice by you? Was that standard Greeneville procedure? Was it a request by an individual?
FT1 SEACREST: That is --
LT. HEDRICK: Just the way it was when you took the watch, and you didn't change it?
FT1 SEACREST: No. That is standard procedure on every submarine I've been on, to have that screen up on one of the consoles. It's been on -- displayed on different consoles on the submarines I've been on, but that display is always up.
LT. HEDRICK: Okay. I want to talk a little bit just for the benefit of the Board members and also for the folks who haven't been privy to our off-line discussions, just in general about some -- some contact tracking and solution development.
Would you say it is easier, harder or the same tracking a contact that is closer or farther away or doesn't make a difference?
FT1 SEACREST: It does make a difference.
LT. HEDRICK: It does make a difference? Which one would be easier to track?
FT1 SEACREST: Actually the ones that are further away are easier to track.
LT. HEDRICK: The ones that are further away are easier. Okay. This question is -- all these questions about tracking is based on tracking passively through Sonar. I'm not talking about visual.
How about contact bearing rate? Does that have any play?
FT1 SEACREST: It has a lot of play in

tracking.
LT. HEDRICK: Okay. Can you give us just a couple seconds of what -- what you think would make -- make it easier to track a contact as far as bearing rate?
FT1 SEACREST: Yeah. The more bearing rate you have.
LT. HEDRICK: The more bearing rate that you have?
FT1 SEACREST: Yeah.
LT. HEDRICK: Bearing rate being how many degrees per minute the contact's bearing is changing?
FT1 SEACREST: Changing in time, yeah.
LT. HEDRICK: And contact at the higher bearing rate is easier to track? I think you had said that earlier. I just wanted to clarify.
FT1 SEACREST: Yes.
LT. HEDRICK: Now, a higher bearing rate over several minutes means the contact changes true bearing longer. It has a larger change in true bearing. Does it -- does the change in true bearing over time also make a difference?
FT1 SEACREST: Yes, I would say so.
LT. HEDRICK: Do you recall what any of your solutions were on contacts that you held when you went to periscope depth?
FT1 SEACREST: Not accurately, no.
LT. HEDRICK: Not accurately? Would you -- do you recall a ball park range to the contacts you held?
FT1 SEACREST: I believe it was 6 to 8,000 yards.
LT. HEDRICK: 6 to 8,000 yards? All the contacts or that was the closest one?
FT1 SEACREST: I believe the closest one I had was about 6,000 yards.
LT. HEDRICK: Do you recall which Sierra number that was? I know it is six days later or seven.
FT1 SEACREST: I want to say the closest one I had was probably Sierra 14.
LT. HEDRICK: Sierra 14? Okay. That's all I have. Thank you very much.
LT. JOHNSON: Lt. Johnson of the U.S. Coast Guard.
This contact range information, you say you -- you had it between 6 and 8,000 yards, is that correct?
FT1 SEACREST: Yes.
LT. JOHNSON: Did you pass that information

to Sonar?
FT1 SEACREST: No.
LT. JOHNSON: Do you know what approximate ranges they had these contacts?
FT1 SEACREST: No.
LT. JOHNSON: You didn't know?
FT1 SEACREST: No, I didn't.
LT. JOHNSON: A while ago, you stated that you had -- that you, in your opinion, that you felt that they had conducted an adequate baffle clear?
FT1 SEACREST: Yes.
LT. JOHNSON: What do you base that on, that you thought it was adequate based on what?
FT1 SEACREST: Guidance, through our NWPs.
LT. JOHNSON: Guidance?
FT1 SEACREST: Guidance. Our NWPs are -- tell us -- give us guidance on how to operate the submarine, how to do certain things.
LT. JOHNSON: So, -- so, basically, --
FT1 SEACREST: Based on --
LT. JOHNSON: -- the fact that they cleared a 120 degrees, they changed course a 120 degrees?
FT1 SEACREST: Yes.
LT. JOHNSON: Is that what you're -- that is all the information alone? What I'm getting at, is there anything else that indicates that that was an adequate course change?
FT1 SEACREST: Course and speed, yeah.
LT. JOHNSON: Okay.
FT1 SEACREST: Baffle clear, and you -- you want to stay on that course for a couple minutes, a minute, to see if you gain any new contacts.
LT. JOHNSON: Yeah. But you have no idea what Sonar was doing during this time?
FT1 SEACREST: No.
LT. JOHNSON: Okay. So, when you say you felt like an adequate baffle clear was conducted, you're basing that on the fact that a 120-degree course change was made --
FT1 SEACREST: Hm-hmm.
LT. JOHNSON: -- and maintained for a couple minutes and then comes back?
FT1 SEACREST: Right.
LT. JOHNSON: Okay. I didn't understand what you meant by that. The CO was issuing orders on the -- on the -- in the control room. Was he issuing all of those orders to the OOD or was he issuing any type of orders to any specific watch stations?
FT1 SEACREST: No. Just the officer of the

deck.

LT. JOHNSON: When you -- you mentioned at the very first here that there were too many people in the control room for you to properly update the CEP plot. Did you ever at any time ask these people to move, to step aside or to allow you to get through them?

FT1 SEACREST: I did, and they started falling over themselves. So, I just backed off.

LT. JOHNSON: How many people were in there?

FT1 SEACREST: It was six to eight -- anywhere between six and seven right there.

LT. JOHNSON: Right in front of the control room?

FT1 SEACREST: The ones --

LT. JOHNSON: Were these -- was the OOD aware of your situation regarding these civilians blocking your way?

FT1 SEACREST: No. He was on the other side of the control room, over where the ship's control party is.

LT. JOHNSON: Did you --

MR. ROTH-ROFFY: This is Tom ROTH-ROFFY. You have -- could you annotate where the locations are of the OOD at that time? Put in some rough circles there. Could you show what you're indicating there?

FT1 SEACREST: Where -- he was in this general area right here.

MR. ROTH-ROFFY: And what are you indicating there with that other shadow or that other --

FT1 SEACREST: Here?

MR. ROTH-ROFFY: -- kidney-shaped there in the other one? Yeah.

FT1 SEACREST: Okay.

MR. ROTH-ROFFY: Those two.

FT1 SEACREST: Okay.

MR. ROTH-ROFFY: And if you would annotate approximate numbers of civilians standing in those areas?

LT. JOHNSON: So, this is Lt. Johnson with the U.S. Coast Guard again. Let me go back to where I was here.

The -- the officer of the deck was on the other side of the control room from you, is that correct?

FT1 SEACREST: Yes, sir.

LT. JOHNSON: And, so, he was not -- at any time, was he made aware that the CEP plot was not being updated?

FT1 SEACREST: No, sir.
LT. JOHNSON: He was never made aware of that?
FT1 SEACREST: No, sir.
LT. JOHNSON: Where was the commanding officer located?
FT1 SEACREST: Up towards the front.
LT. JOHNSON: Was he in a position -- was he aware that the CEP plot was not being updated?
FT1 SEACREST: I never told him. So, I don't know if he was aware or not.
LT. JOHNSON: Did he observe you asking the civilians to move?
FT1 SEACREST: I don't think so.
LT. JOHNSON: The executive officer, was he aware?
FT1 SEACREST: No.
LT. JOHNSON: Was he in the control room at all?
FT1 SEACREST: I didn't even see the XO.
LT. JOHNSON: You didn't see him there?
FT1 SEACREST: No.
LT. JOHNSON: Was anyone else beside yourself aware that the CEP plot was not being maintained?
FT1 SEACREST: I'd have to say no.
LT. JOHNSON: So, you -- you were the only one that knew that -- that the data was not representing the truth or actual --
FT1 SEACREST: At that time?
LT. JOHNSON: -- time -- at that time?
FT1 SEACREST: I can't speak for the other members, but I'd have to say no.
LT. JOHNSON: Okay. That's good. At periscope depth, what reports did you hear being made to the officer of the deck?
FT1 SEACREST: At periscope depth?
LT. JOHNSON: When you -- when you made your -- your ascent from a 150 feet to periscope depth, I'm assuming that there are reports that are made to the OOD?
FT1 SEACREST: Only the dive coming up.
LT. JOHNSON: Okay.
FT1 SEACREST: No -- no --
LT. JOHNSON: The dive --
FT1 SEACREST: No one says anything in the control room or makes any reports until they hear the officer of the deck saying no close contacts.
LT. JOHNSON: Okay. So, Sonar doesn't make any statements?

FT1 SEACREST: No.
LT. JOHNSON: ESM doesn't make anything?
FT1 SEACREST: No.
LT. JOHNSON: When does ESM make their report?
FT1 SEACREST: As soon as he hears the officer of the deck saying no close contacts.
LT. JOHNSON: Okay. So, after the OOD made his report, were there any reports made to the OOD?
FT1 SEACREST: That, I don't remember.
LT. JOHNSON: You said -- and my question is a little disjointed here. So, bear with me. You said earlier that at the time of the collision, when it actually happened, you said at that time, and I quote, "You didn't think that you'd hit anyone that you were tracking at that time", but now, do you now think you hit someone that you were tracking?
FT1 SEACREST: Well, after talking to individuals and the reconstruction that was going on over at Squadron 7, it would appear we did.
LT. JOHNSON: Has someone told you that you hit someone you were tracking?
FT1 SEACREST: Yes.
LT. JOHNSON: You've been told that?
FT1 SEACREST: Yes.
LT. JOHNSON: But that's the first inclination that you had, was being told that by the people at Squadron 7?
FT1 SEACREST: Yes.
LT. JOHNSON: And who did they say you hit?
FT1 SEACREST: Sierra 13.
(Change of Tape)
LT. JOHNSON: Okay. Briefings for the control party. Do you have any idea why there was not a briefing held prior to coming to periscope depth? Is there normally a brief held?
FT1 SEACREST: Normally, that briefing consists of, okay, we're coming to periscope depth, what are we going to do? Copy of the broadcast, blow the sanitary, shoot the TDU, what household keeping allusions we're going to do. We didn't do any of that.
LT. HEDRICK: Lt. Hedrick. TDU is an acronym for Trash Disposal Unit. It's how the submarine typically removes trash from the ship.
LT. JOHNSON: During this briefing, do they normally get a synopsis from Sonar regarding the contacts that they're actively tracking?
FT1 SEACREST: During the briefing? Yes, but that happens anyway. It happened anyway.

LT. JOHNSON: Okay. Did you -- did you hear any reports from Sonar given to the officer of the deck regarding Sonar contacts while you were at periscope depth?
FT1 SEACREST: While at periscope depth?
LT. JOHNSON: Right.
FT1 SEACREST: No. I didn't hear it. Personally, I didn't hear it.
LT. JOHNSON: Okay. While you're at 400 feet and prior to the EMBT blow, was there any effort to update the surface contact picture in the minds of the officer of the deck, commanding officer or ship control party?
FT1 SEACREST: No.
LT. JOHNSON: What about fixing the ship's position? Was there any effort made to -- we've traveled -- we are now located here?
FT1 SEACREST: I don't know. I can assume the quarter master, yeah, had our position when we did our blow. I mean, that's his job. He keeps track of the ship's positions.
LT. JOHNSON: Okay. And in your -- in your estimation, and I know it's just an estimation -- and I don't expect it to be accurate. You may have already answered this, and if you did, I apologize. I didn't make a note.
How long did it take the vessel to get to 400 feet to periscope depth?
FT1 SEACREST: 400 feet to periscope depth?
LT. JOHNSON: I'm sorry. A 150 feet to periscope depth.
FT1 SEACREST: Couple minutes.
LT. JOHNSON: When you -- when you were at periscope depth, did you hear the officer of the deck make any comments about the periscope being submerged or waves flapping or not being able to see good?
FT1 SEACREST: No.
LT. JOHNSON: He never made any comments to that effect?
FT1 SEACREST: No.
LT. JOHNSON: How long would you estimate you spent at periscope depth?
FT1 SEACREST: Just a couple minutes.
LT. JOHNSON: A couple of minutes?
FT1 SEACREST: Yeah.
LT. JOHNSON: Two minutes? A minute?
FT1 SEACREST: Two. I'd say less than two minutes.
LT. JOHNSON: Could it have been less than

one minute or you don't really know?
FT1 SEACREST: That, I don't really have a good feel for the time. I just know it was a short period of time.
LT. JOHNSON: Were you, in your opinion, since we went through the adequate baffle clear, were you -- were you pretty much satisfied within -- you have a tremendous amount of experience, that an adequate search with the periscope was made for contacts?
FT1 SEACREST: Yes.
LT. JOHNSON: Once you secured the periscope depth, and the captain ordered emergency beep, how long would you estimate it'd take you to get to 400 feet?
FT1 SEACREST: Oh, three-four minutes.
LT. JOHNSON: Three-four minutes, and then once you arrived at 400 feet, how long did you stay at that depth?
FT1 SEACREST: Maybe another five minutes.
LT. JOHNSON: So, three or four minutes to get down and five minutes at 400 feet. What was -- what was going on during this five minutes at 400 feet?
FT1 SEACREST: Just getting people ready to do the blow.
LT. JOHNSON: Okay. Briefings?
FT1 SEACREST: The briefing was already done.
LT. JOHNSON: Already done. So, there was no briefing going on at that time?
FT1 SEACREST: Nope.
LT. JOHNSON: At any time during this -- and I'm going to talk about the entire evolution, from periscope depth to descent down, flat line at 400, coming up. Was the officer of the deck taking any actions to -- to actively ascertain the contact picture on the surface from anyone?
FT1 SEACREST: No.
LT. JOHNSON: Was he questioning Sonar regarding their contacts?
FT1 SEACREST: No, sir.
LT. JOHNSON: Did he ask you any questions regarding what you were tracking?
FT1 SEACREST: No, sir.
LT. JOHNSON: Was the captain -- was the commanding officer doing anything to try to figure out what the contact picture looked like?
FT1 SEACREST: Not to my knowledge, no. He wasn't asking me personally.
LT. JOHNSON: The executive officer?
FT1 SEACREST: I believe he wasn't even in

the control room at the time.
LT. JOHNSON: Okay. You alluded a few minutes ago that the point when the sea state increases, the -- the contact detection capability decreases, okay, and that's -- we were talking manual and visual reference, I believe, was the question, about -- we got confused over the word "accuracy", and I'm going to -- I'm -- I'm assuming that we're talking about detection capability, not accuracy capability.
Is that same thing true for Sonar?
FT1 SEACREST: As sea state increases?
LT. JOHNSON: Do you know?
FT1 SEACREST: Hmm.
LT. JOHNSON: I mean, in your experience?
FT1 SEACREST: Yeah. On the surface, the higher the -- hm-hmm.
LT. JOHNSON: Was this EMBT blow -- you've done how many in your career, would you just guess? A lot?
FT1 SEACREST: Yeah. Over -- I don't know. I'd say over 20.
LT. JOHNSON: Is this -- was this a normal EMBT blow on February 9th? Did it happen pretty much like they always do?
FT1 SEACREST: Yes.
LT. JOHNSON: Do most of the ones you've conducted occur or initiate at 400 feet?
FT1 SEACREST: Yes, sir.
LT. JOHNSON: Is it normal that the captain is in the 1MC during the ascent, talking?
FT1 SEACREST: Hmm. It's not normal. I don't know.
LT. JOHNSON: Was it normal for that reason?
FT1 SEACREST: For this captain? Yes.
LT. JOHNSON: It was normal for this captain?
FT1 SEACREST: Yes, for this captain.
LT. JOHNSON: How many EMBT blows have you done on the Greeneville of this kind?
FT1 SEACREST: I've done, in less than a year I've been there, I've done two.
LT. JOHNSON: You've done two, and on both -- was the one on February 9th one of those two?
FT1 SEACREST: Yes.
LT. JOHNSON: So, on the other one, did you talk on the MC during your ascent?
FT1 SEACREST: I can't remember that. I want to say the only time he really talks on the 1MC like that is when we have guests on board.
LT. JOHNSON: Hm-hmm.

FT1 SEACREST: When we did the one last year, --
LT. JOHNSON: Yeah.
FT1 SEACREST: -- that was for -- after coming out of the dry dock --
LT. JOHNSON: Yeah.
FT1 SEACREST: -- testing.
LT. JOHNSON: Right.
FT1 SEACREST: So, --
LT. JOHNSON: So, it was really kind of not the normal EMBT blow because he was giving a running narrative, so to speak? Is that what --
FT1 SEACREST: The tours?
LT. JOHNSON: Yeah.
FT1 SEACREST: When we do VIP cruises like that?
LT. JOHNSON: Hm-hmm.
FT1 SEACREST: Yes, it's normal. If you're talking about regular naval operations and us going out and doing it, no, then he wouldn't.
LT. JOHNSON: This -- a sailor, from your experience, ascent on a submarine, is he able to distinguish the captain's voice over the 1MC?
FT1 SEACREST: Oh, yeah.
LT. JOHNSON: What is the immediate reaction of the sailor when the captain comes over the 1MC?
FT1 SEACREST: Everyone goes quiet.
LT. JOHNSON: Where is their attention directed?
FT1 SEACREST: To the nearest 1MC box.
LT. JOHNSON: So much so, that don't we often sailors staring at the box --
FT1 SEACREST: Yeah.
LT. JOHNSON: -- as if they could see the captain?
FT1 SEACREST: Yes.
LT. JOHNSON: So, is it a fair statement then that when the captain speaks over the 1MC, where is the entire crew's attention directed?
FT1 SEACREST: To the boxes.
LT. JOHNSON: To the boxes? Is it possible or did the 1MC announcement could have distracted crew members?
FT1 SEACREST: Who were involved with the blow?
LT. JOHNSON: Who were just sitting on watch?
FT1 SEACREST: No.
LT. JOHNSON: So, their attention is not directed to the 1MC?

FT1 SEACREST: No, because your key watch standers are right there in the control room. The CO is standing right there. So, no.

LT. JOHNSON: The Sonar watch standers are in the control room or are they in Sonar?

FT1 SEACREST: They're in Sonar, but the Sonar door is right there, and all it is is a curtain that hangs across --

LT. JOHNSON: My experience is the same -- my experience is the same as yours.

FT1 SEACREST: So, I would say were they distracted, no.

LT. JOHNSON: Interesting. You said on the -- on the CEP plots, you -- you plot a lot of information about contacts, what they're classified as, what you think they are, screw blade information and things like that.

Were you plotting all this information on your CEP plot?

FT1 SEACREST: No.

LT. JOHNSON: Any reason you were not plotting that?

FT1 SEACREST: There were too many people in the control room. Too many civilians.

LT. JOHNSON: The entire time you were maintaining the plot?

FT1 SEACREST: Up until we started doing the angles and dangles.

LT. JOHNSON: What about prior to that?

FT1 SEACREST: Oh, we kept the -- the plot was up-to-date up until that happened.

LT. JOHNSON: Were you -- were you -- yes, but were you entering this information, all this information on there or were you just putting a dot for like the Sierra 10 or the Sierra 9?

FT1 SEACREST: I was putting the information on there as I was receiving it from Sonar.

LT. JOHNSON: Were they giving you what they were classing it as and the possible range? Do you put possible ranges on that CEP plot?

FT1 SEACREST: If they give me possible ranges, yes.

LT. JOHNSON: Okay.

FT1 SEACREST: Or I put the type of range they give me.

LT. JOHNSON: Do you guys normally share that information? Do they tell you where they think it is, and you -- you do your wizard stuff on your equipment and come up with what you think it is, and do you often

bounce ideas back and forth?
FT1 SEACREST: Not all the time. It depends on the situation. When we're transiting like that, no.
LT. HEDRICK: So, when you're transiting, you don't normally discuss things like that?
FT1 SEACREST: No.
LT. JOHNSON: Okay. I think that's all I have. Thank you very much.
FT1 SEACREST: Hm-hmm.
LTJG KUSANO: You said basically more -- more course changes the better for getting a good idea where a contact is at. So, you felt pretty -- you felt pretty comfortable that he came over -- he came over to clear the baffle, you guys were maneuvering pretty good. You felt pretty comfortable that you guys had a pretty good range --
FT1 SEACREST: Yes, sir.
LTJG KUSANO: -- on the contacts? Okay. One other question I have is what went on. You knew that the contacts were to the north, and you came up, the OOD and the captain looked around, and you guys came around at …. Did you know if they did any course changes?
FT1 SEACREST: To 3-4-0?
LTJG KUSANO: Yes.
FT1 SEACREST: Roughly? Yes.
LTJG KUSANO: Okay. Did you feel a concern at all or were you pretty confident that the OOD or the captain knew what he was doing?
FT1 SEACREST: I was pretty confident that the OOD and the captain, especially the captain, knew what he was doing.
LTJG KUSANO: Okay. But is it fair to say that the OOD did the periscope look around? Was he concerned or was he --
FT1 SEACREST: No, because we had just come from PD, and we didn't see anything.
LTJG KUSANO: Okay.
FT1 SEACREST: No. My level of confidence immediately rose up because we don't hold anything visually. So, no, I wouldn't have said anything to him in any event.
LTJG KUSANO: That's all I've got.
LT. COMMANDER SANTOMAURO: This is Lt. Commander SANTOMAURO.
At the point that the ship was at periscope depth, and you were doing a visual search, about how far away did you have Sierra 12 and 13?
FT1 SEACREST: That, I don't remember.

LT. COMMANDER SANTOMAURO: Can you give me an approximate number?
FT1 SEACREST: Say in the range of 6-7,000 yards.
LT. COMMANDER SANTOMAURO: About three and a half miles?
FT1 SEACREST: Yes.
LT. COMMANDER SANTOMAURO: Okay. At any time prior to underway or during the morning or prior to the baffles clear, did anyone talk about what the evolution was going to be, and possibly what the concerns would be as far as the contact situation when you're actually going to do an emergency blow?
FT1 SEACREST: Not that I'm aware of. I wasn't involved in any such conversations.
LT. COMMANDER SANTOMAURO: When the CO said he had a good feel for the contacts, what -- what does that mean when he says I have a good feel for the contacts? What did you take that to mean?
FT1 SEACREST: I'd take that to mean that in his mind, he knew or roughly knew where the contacts were.
LT. COMMANDER SANTOMAURO: Okay. Based on that statement, how do you -- how do you think he gleaned that? Was that just based on the visual sensor, by taking a look around? Is that --
FT1 SEACREST: Oh, he said that before we came to periscope depth.
LT. COMMANDER SANTOMAURO: So, before you -- during the baffle clear?
FT1 SEACREST: That was on the way back over to 3-4-0.
LT. COMMANDER SANTOMAURO: And how -- this question may have been asked. How long exactly were you at periscope depth before emergency blow?
FT1 SEACREST: Roughly a couple minutes.
LT. COMMANDER SANTOMAURO: Couple minutes.
FT1 SEACREST: Less than two minutes.
LT. COMMANDER SANTOMAURO: Next question. You stated that when you first get a contact, and you plot them, you automatically assume that he's closing, is that correct?
FT1 SEACREST: That is correct.
LT. COMMANDER SANTOMAURO: Okay. So, if a contact has a low bearing rate or a steady bearing -- say he's a low bearing rate, you're already assuming that he's closing?
FT1 SEACREST: Correct.
LT. COMMANDER SANTOMAURO: And, so, would

that be a cause for any kind of additional concern or alarm?

FT1 SEACREST: Not right away, because it's an initial gain, and I can make it do whatever I want. So, honestly, no.

LT. COMMANDER SANTOMAURO: Would you normally, if you weren't time compressed in those kind of events, and you knew you were going to have to eventually come up to periscope depth, what could be done to better solve that solution? What would be done to aggressively pursue accurate range?

FT1 SEACREST: Course changes greater than 60 degrees.

LT. COMMANDER SANTOMAURO: And about how -- how many minutes would you think it would take to actually solve it?

FT1 SEACREST: The whole thing?

LT. COMMANDER SANTOMAURO: To really -- to really get an absolute -- I know you can't -- I know it's not perfect, but about how many minutes?

FT1 SEACREST: Figure -- do your course changes. If you went 60 degrees across the line of bearing, you did it as quick as possible, 12 knots, stayed on course for a couple minutes, came back around, went a 120 degrees, your initial 60 and 60 more, I'd say about less than 10 minutes.

LT. COMMANDER SANTOMAURO: So, about less than 10 minutes more -- probably a more accurate range for it. When the ship's at battle station, at battle stations, how many people are in the control room?

FT1 SEACREST: A lot.

LT. COMMANDER SANTOMAURO: Number?

FT1 SEACREST: Accurate number?

LT. COMMANDER SANTOMAURO: Accurate number.

FT1 SEACREST: Let's see. I'd say roughly about 20.

LT. COMMANDER SANTOMAURO: About 20? So, during a battle station scenario, do you think the ship was more crowded during battle station scenario or do you think it was more crowded with the civilians on board?

FT1 SEACREST: I think it's a different type of crowded. When you're in a battle station scenario, you have guys that are actually sitting down at each one of these consoles. You -- you -- you've got them seated. They are not standing up. They're just not standing up. We have a CEP plotter who sits right there, and we have the quarter master, who's back in here.

So, those are the only people that are moving around, and that's it. Your fire control coordinator, your weapon control coordinator stands here. Your approach officer, commanding officer, and then the officer of the deck, who's hanging out back here by the plot, and then he will move occasionally from the plot to the ship's control, but normally these guys are right here, and then if you have a plot coordinator, he's back here, too.

So, yeah, it's a completely different type of crowded than what we had Friday.

LT. COMMANDER SANTOMAURO: That's all I got. Thank you.

FT1 SEACREST: Hm-hmm.

COMMANDER CACCIVO: This is Commander CACCIVO. Following the collision, did we establish a secondary plot?

FT1 SEACREST: I initially looked over to see if they were, and they were clearing off. They had charts on the secondary plotter. I saw them clearing off, but I just assumed that's what they were doing, is clearing that plot off to start the secondary plotter. If it actually got started, I don't remember.

COMMANDER CACCIVO: Did -- did you enter visual observations for the life boats in the Fire Control System?

FT1 SEACREST: No sir I didn't.

COMMANDER CACCIVO: Okay. So, who was taking the visual observations?

FT1 SEACREST: There were no -- to my knowledge, there were no actual visual observations or bearings laid out, other than if they were laid out on the quarter master's chart. That would be the only -- and I believe Petty Officer Blanding was doing that, but I can't be 100 percent sure that he was doing that.

COMMANDER CACCIVO: So, there was no secondary geoplot maintained to track the life boats or any man overboard?

FT1 SEACREST: Like I said, I saw them clearing it off. It looked like they were getting ready to set it up, but I don't know if they actually did it.

COMMANDER CACCIVO: So, why would you not be entering bearings to the life boats in the Fire Control System if you did not have reason to believe that they were being plotted manually?

FT1 SEACREST: Because I was trying to figure out who we hit, if we hit anybody.

COMMANDER CACCIVO: Would it be more

important for you to plot contacts in the water or figure out a contact that you hit in the past?

FT1 SEACREST: You know, at the time, I guess I just wasn't thinking right, and, you know, a lot of things happened really quick in that short period of time. So, I can't -- right now, yeah, it's more important to, you know, get the bearings to those guys and lay them out so he can keep track of them. But I didn't do that in Fire Control.

COMMANDER CACCIVO: Okay. Did you find out which contact we hit?

FT1 SEACREST: At the time, when I was talking to Sonar, we didn't believe we hit anybody. I know now, after the fact.

COMMANDER CACCIVO: Okay. So, do I understand correctly that your comment that you tried to find out which contact you hit basically consists of talking to Sonar?

FT1 SEACREST: Yeah. Seeing if we still held track on the contacts that we had had.

COMMANDER CACCIVO: Okay. So, once you established -- once Sonar told you that you held all the contacts, what did you do then?

FT1 SEACREST: I went back out in the control and pretty much just tried to help out where I can.

COMMANDER CACCIVO: Okay. At that point, did you give any consideration to stationing an additional fire control technician on watch?

FT1 SEACREST: I only had two other FTs on board, and they were busy with helping with the man overboard.

COMMANDER CACCIVO: Are there any engineering watch standers who could maintain the CEP?

FT1 SEACREST: I imagine there are.

COMMANDER CACCIVO: Are there any watch standers, other than your FTs, trained to maintain the CEP?

FT1 SEACREST: Yes.

COMMANDER CACCIVO: Who are those watch standers?

FT1 SEACREST: The NAV ETs we have on board are -- are trained.

COMMANDER CACCIVO: Okay. So, at any -- did you request for a NAV ET to begin maintaining the CEP?

FT1 SEACREST: No.

COMMANDER CACCIVO: Okay. Were you able to maintain the CEP yourself at this time?

FT1 SEACREST: At that time, yeah. All the civilians had left the control room.

COMMANDER CACCIVO: Okay. Earlier, you referred to -- you stated that the -- following the collision, the commanding officer raised the Number 1 scope. Following that, the officer of the deck raised the secondary scope and energized the perivis.

Is the Number 2 scope the primary scope or the secondary scope?

FT1 SEACREST: The Number 2 scope is the primary scope.

COMMANDER CACCIVO: Okay. Why did you assume a closing solution initially for a contact?

FT1 SEACREST: Because you don't know what he's actually going to do. Since we can't see him, we always call for a worst case scenario.

COMMANDER CACCIVO: Why is that a worst case scenario?

FT1 SEACREST: Closing?

COMMANDER CACCIVO: Right.

FT1 SEACREST: He's coming right at you.

COMMANDER CACCIVO: Okay. Why are fast turns better for TMA?

FT1 SEACREST: Why are faster turns better for TMA? You want that rapid change of bearing rate, instantaneous maneuver.

COMMANDER CACCIVO: Why do you want instantaneous maneuver -- okay. Go ahead.

FT1 SEACREST: Well, it helps the Fire Control System itself. The program, the algorithm that it uses, it needs that change in bearing rate, that fast change in bearing rate in order for it to -- and it will -- it just helps it. It makes it better for us. I don't know how -- exactly how the whole program works in there. I just know that the faster you change bearing rates, the better your solution is in the Fire Control.

COMMANDER CACCIVO: If you were doing mental gym to determine the range in the contact, would you prefer a faster exchange bearing rate, a faster turn rate or a slower turn rate?

FT1 SEACREST: A faster turn rate.

COMMANDER CACCIVO: Why?

FT1 SEACREST: You want to see -- you'll get faster, your bearing rate change is greater, the more bearing rate you have.

COMMANDER CACCIVO: My turn rate will have no impact on his bearing rate. My course will have a dramatic impact on his bearing rate.

My question is, why do you want to have a higher turn rate in the maneuver? What impact does

that have on your ranging determination?
FT1 SEACREST: On my ranging determination? None.
COMMANDER CACCIVO: Okay. Do you have -- okay. Have you thought about that?
FT1 SEACREST: I've thought about it, and I don't know.
COMMANDER CACCIVO: Okay. So, you don't know how -- you do or you don't know how to do an Elkland range?
FT1 SEACREST: Oh, I do know how to do it.
COMMANDER CACCIVO: Okay. Okay. What is bearing scatter, and why does it exist?
FT1 SEACREST: Bearing scatter? That's when your bearings are jumping around. They're not -- they're just jumping around. They're not -- you may have a contact that's on Bearing 3-4, 3-4-5, and when the bearings are coming in, they'll come in 3-4-5.5, 2-4-5.3-4-4, whatever, and they're scattered around the screen. They're actually --
COMMANDER CACCIVO: Okay. Well, the second part of that was why does it exist?
FT1 SEACREST: Why does it exist? Environment. How noisy the contact is. How steady the tracker is on that -- that demonstration.
COMMANDER CACCIVO: Okay. Would you say you had a lot of contact that day?
FT1 SEACREST: A lot? No more than usual.
COMMANDER CACCIVO: Okay. When you're deployed, how many -- can you give me a rough order of magnitude of how many merchants or trawlers you would have to deal with at a time?
FT1 SEACREST: Actually deployed over there? Quite a few.
COMMANDER CACCIVO: Give me a rough order of magnitude.
FT1 SEACREST: I would say over -- over a hundred a day.
COMMANDER CACCIVO: How many would you have, say, at any given time? A snapshot?
FT1 SEACREST: In a snapshot? I could have anywhere between, oh, six and eight at a time, and I've been -- it just depends on where you're at, too. Certain areas, you could have --
COMMANDER CACCIVO: Did you say six or eight commercial contacts is nominal at a time on deployment?
FT1 SEACREST: The places I've been? Yeah.
COMMANDER CACCIVO: Okay. Have you ever had periods where you've had significantly more at the same

time?
FT1 SEACREST: Oh, yes.
COMMANDER CACCIVO: Give me a rough order of magnitude what that would be.
FT1 SEACREST: Oh, 20-30- --
COMMANDER CACCIVO: Okay.
FT1 SEACREST: -- 40.
COMMANDER CACCIVO: And, so, how -- just before you started this series of evolutions, how many contacts did you have total again?
FT1 SEACREST: Two.
COMMANDER CACCIVO: Okay.
FT1 SEACREST: I take that back. Before we started angles and dangles, --
COMMANDER CACCIVO: Right.
FT1 SEACREST: -- we had three.
COMMANDER CACCIVO: Okay.
FT1 SEACREST: And we lost the one, and we never retrieved it.
COMMANDER CACCIVO: So, would you consider this a large amount of contacts, a small amount of contacts?
FT1 SEACREST: Very small.
COMMANDER CACCIVO: Let me just ask you again to make sure. Did you tell the OOD you were not maintaining the CEP plot?
FT1 SEACREST: No, sir.
COMMANDER CACCIVO: Okay. What would have been the right answer?
FT1 SEACREST: The right answer would have been to tell him.
COMMANDER CACCIVO: Okay. And if you were unable to physically maintain a plot with the people in front of you, what would have been an alternative?
FT1 SEACREST: To getting somebody up there to actually sit there and do it.
COMMANDER CACCIVO: Okay.
FT1 SEACREST: For 20 minutes, it would have been. That could have been feasible.
COMMANDER CACCIVO: Okay. You stated in your comments that at a 32-degree bearing difference dot, you would not see a turn on the contact?
FT1 SEACREST: No, you wouldn't.
COMMANDER CACCIVO: Okay. Just give me a second here while I figure out how to phrase this question.
So, if a contact turns to a 90-degree angle on the bow at 10 knots, you would never see -- you would never see that turn?

FT1 SEACREST: How close was he?
COMMANDER CACCIVO: 5,000 yards.
FT1 SEACREST: You'd see that turn. But it wouldn't be as dramatic if it was at -- if you were in the 8-degree scale or a 4-degree scale.
COMMANDER CACCIVO: Okay. So, at a 32-degree bearing difference dot, say, you could see target maneuvers, they're just harder to detect?
FT1 SEACREST: Yeah. Much harder to detect.
COMMANDER CACCIVO: Okay. You indicated that going -- prior to going to periscope depth -- correct me if I'm wrong here because I wrote this down, and I'm trying to figure it out -- Sierra 13 had a left bearing rate?
FT1 SEACREST: From my recollection, yes.
COMMANDER CACCIVO: Okay. Is that right? That's what you -- you remember a left bearing rate? So, now when you came around the course north to surface, what would that do to your bearing rate?
FT1 SEACREST: It should change it to the right.
COMMANDER CACCIVO: Or what?
FT1 SEACREST: But he maintained left.
COMMANDER CACCIVO: So, you -- during the emergency surfacing, you still held him?
FT1 SEACREST: No, we didn't -- once we started to blow, we didn't hold any contacts.
COMMANDER CACCIVO: So, you -- so, then, when was his bearing rate right?
FT1 SEACREST: It never went right. It was always to the left.
COMMANDER CACCIVO: Didn't you just tell me it went right?
FT1 SEACREST: No. I think you misunderstood me.
COMMANDER CACCIVO: Okay. Okay.
LT JOHNSON: I -- could you ask that again? Because I thought I heard the same thing.
COMMANDER CACCIVO: Okay.
LT JOHNSON: I'm a little confused here.
COMMANDER CACCIVO: Okay. So, before you went to PD, you had a left bearing rate, --
FT1 SEACREST: Okay.
COMMANDER CACCIVO: -- and now you came around the course north for surfacing, --
FT1 SEACREST: Hm-hmm.
COMMANDER CACCIVO: -- and what did the bearing rate do?
FT1 SEACREST: Oh, the bearing rate stayed

left.
COMMANDER CACCIVO: It did?
FT1 SEACREST: Yes.
COMMANDER CACCIVO: Did it increase or decrease?
FT1 SEACREST: I think, if I remember right, it -- I want to say it increased a little but not by much.
COMMANDER CACCIVO: Is that physically possible?
FT1 SEACREST: Knowing what he was doing, no. But I can only go by what I remember seeing on my time bearing screen.
COMMANDER CACCIVO: No. But if you think about your going to PD on a southeasterly course, and the contact has a left bearing rate -- okay. Okay.
Is there a requirement to maintain a fire control log?
FT1 SEACREST: The requirement is that if any contact is designated as a master contact, you make a fire control log.
COMMANDER CACCIVO: Okay. Were there any WL or 9 acoustic intercept receiver audible alarms going off at this time?
FT1 SEACREST: Hmm. No, sir.
COMMANDER CACCIVO: Okay. How often had you updated the system solution in Fire Control? For Sierra 13? Excuse me.
FT1 SEACREST: I don't remember how often. I know I did it. I know I did it when we did the baffle clear, and then I know I did it once we came up to periscope depth.
COMMANDER CACCIVO: Okay. Prior to going to periscope depth, did you ask -- do I understand that's the time when you asked Sonar for their feel for what the range was for Sierra 13?
FT1 SEACREST: I never asked them what their range was for Sierra 13.
COMMANDER CACCIVO: Okay. Can you tell me what goes on a CEP plot, besides bearings?
FT1 SEACREST: Sure. Any contact information you get as far as classification, screw blade turn count, any range information you might get from Sonar, other sources, own ship -- own ship's course, any time when the ship changes depth, evolutions that own ship's performs, when the periscope's master antennas are raised and lowered, ESM contact if you get them, and that's generally it.
COMMANDER CACCIVO: Why do you put ESM

contacts on there?
FT1 SEACREST: They all try and correlate them to -- if they give us a bearing, it can help correlate the actual sonar contacts we might have or if we don't.
COMMANDER CACCIVO: Okay. If the Fire Control System crashed, where would you go to get -- recreate this data that was in the Fire Control System?
FT1 SEACREST: If it crashed, where would I go to recreate it?
COMMANDER CACCIVO: If you had to cold start Fire Control.
FT1 SEACREST: You could get some of the data out of the Tac 3.
COMMANDER CACCIVO: Was the Tac 3 up and running?
FT1 SEACREST: Oh, yes.
COMMANDER CACCIVO: It was?
FT1 SEACREST: Yes.
COMMANDER CACCIVO: Were solutions being developed in the Tac 3?
FT1 SEACREST: Solutions being developed? No, but it was up and running. The solution's automatic. The contact's automatically going to Tac 3, and they -- the Fire Control solutions, I believe, go to the Tac 3.
COMMANDER CACCIVO: Okay. So, would -- would the ESM contacts be in the Tac 3?
FT1 SEACREST: No.
COMMANDER CACCIVO: Would periscope observations be in a Tac 3?
FT1 SEACREST: If I put them in Fire Control, yes.
COMMANDER CACCIVO: They go to the Tac 3?
FT1 SEACREST: Yes.
COMMANDER CACCIVO: Okay. Would the -- would the ranges from Sonar be in the Tac 3?
FT1 SEACREST: That, I'm not sure of. I can't say.
COMMANDER CACCIVO: But all that would be on the CEP?
FT1 SEACREST: Should be, yes.
COMMANDER CACCIVO: Okay. So, really that CEP would be a back-up to the Fire Control System?
FT1 SEACREST: Yes and no.
COMMANDER CACCIVO: Which is it?
FT1 SEACREST: Some of the information, yes. The majority of it, you would know what contacts you held and basically their bearings, their bearing-

drifts, and the types of contacts they were.
COMMANDER CACCIVO: Okay.
FT1 SEACREST: But I don't -- we don't put, you know, range course and speed on the CEP for Fire Control. So, we don't do that.
COMMANDER CACCIVO: Okay.
FT1 SEACREST: As far as I know, it's not a requirement.
COMMANDER CACCIVO: Okay. How long was the scope up for search at periscope depth?
FT1 SEACREST: Less than two minutes.
COMMANDER CACCIVO: What was the range you expected Sierra 13 to be at when you went to periscope depth?
FT1 SEACREST: Between 5 and 6,000 yards.
COMMANDER CACCIVO: Would you expect that contact to be visible?
FT1 SEACREST: Yes.
COMMANDER CACCIVO: Okay. Were you surprised when you didn't see him in the perivis?
FT1 SEACREST: No, not really.
COMMANDER CACCIVO: Why not?
FT1 SEACREST: Because -- well, because I know Fire Control, and it's only as good as the maneuvers you make and -- and the -- and I've been off by thousands of yards before on contacts. So.
COMMANDER CACCIVO: Did you have a feel for what you thought your range uncertainty was on these contacts?
FT1 SEACREST: Yes, a couple thousand yards.
COMMANDER CACCIVO: So, you say you thought it was at 6,000. So, that meant he could be anywhere from 4 to 8,000 yards?
FT1 SEACREST: Yes.
COMMANDER CACCIVO: So, would you still be expecting to be able to see him at periscope depth?
FT1 SEACREST: With given sea state? No, not at 8,000 yards, I don't think you would find him.
COMMANDER CACCIVO: But you would --
FT1 SEACREST: At 4,000.
COMMANDER CACCIVO: -- at 4 to 6 at least, right?
FT1 SEACREST: Yes.
COMMANDER CACCIVO: Okay. Did you ask for a look down the bearing?
FT1 SEACREST: I didn't have to because he had already done it.
COMMANDER CACCIVO: He did a deliberate look down the bearing at Sierra 13?

FT1 SEACREST: He did a deliberate look down the bearings of the -- the contacts in that -- in that northeast -- yeah. I was watching him.

COMMANDER CACCIVO: Did -- at any time, did he report that he did a look -- did the OOD report or the commanding officer report that he did a look down the bearings to the contacts?

FT1 SEACREST: No.

COMMANDER CACCIVO: So, he stopped and looked down that direction?

FT1 SEACREST: Yes.

COMMANDER CACCIVO: Okay. And how did the waves affect your view? Were they rolling over the periscope?

FT1 SEACREST: 6-0 feet, we were taking some, yeah.

COMMANDER CACCIVO: How much scope time were you getting? How much time was the window available, and how much time was it covered by a wave?

FT1 SEACREST: It was only covered by a wave for a couple seconds.

COMMANDER CACCIVO: To me, that would sound pretty good, like we weren't taking hits over the scope. Is that reasonable?

FT1 SEACREST: Yeah.

COMMANDER CACCIVO: So, it was a pretty good field of vision?

FT1 SEACREST: Yeah.

COMMANDER CACCIVO: Pretty good look?

FT1 SEACREST: I thought it was pretty good, yeah.

COMMANDER CACCIVO: Okay. When you had -- when you have civilians on board, do you run ship's drills?

FT1 SEACREST: We didn't this time around, and --

COMMANDER CACCIVO: Do you typically run fire-fighting drills when civilians are on board?

FT1 SEACREST: On the Greeneville, no.

COMMANDER CACCIVO: Do you typically run engineering drills when civilians are on board?

FT1 SEACREST: No.

COMMANDER CACCIVO: Do you typically do engineering and fire-fighting drills when you're underway?

FT1 SEACREST: Yes.

COMMANDER CACCIVO: Okay. Do you typically do -- did you do any ship's force training with -- while the civilians were on board, any divisional or

departmental training?
FT1 SEACREST: No.
COMMANDER CACCIVO: Do you typically do divisional and departmental training while you're underway?
FT1 SEACREST: Yes.
COMMANDER CACCIVO: Okay. So, would you say that things were definitely different with civilians underway? The routine? Because previously you didn't. You said it was the same. That's what I'm trying to clarify here.
FT1 SEACREST: Oh, the same? Okay. If we take the submarine out for a day, yeah, it's the same. We don't do any of that for a day.
COMMANDER CACCIVO: My point is, with civilians on board, the routine changes. It appears to me your shipboard routine changes. You obviously don't do the ship's force drills. You don't do ship's force training.
FT1 SEACREST: Yeah.
COMMANDER CACCIVO: Why wouldn't you do these things while there are civilians on board?
FT1 SEACREST: Why?
COMMANDER CACCIVO: That was my question.
FT1 SEACREST: Yeah. We have civilians on board. We were there for them. We were there to show them what we do for a living. We tried to explain to them and give them a broader knowledge of submarines and submarine life.
COMMANDER CACCIVO: Would doing those normal routine underway evolutions distract from your ability to monitor and supervise your -- your guests?
FT1 SEACREST: Yeah. I would think so, yes.
COMMANDER CACCIVO: Okay. Is it normal to conduct pre-evolution briefs for major evolutions?
FT1 SEACREST: Yes.
COMMANDER CACCIVO: Is periscope depth considered a major evolution? Don't confuse major with routine.
FT1 SEACREST: I would say no.
COMMANDER CACCIVO: Do you conduct a pre-evolution brief for going to periscope depth?
FT1 SEACREST: Yes.
COMMANDER CACCIVO: Why?
FT1 SEACREST: So everybody knows why we're going up there.
COMMANDER CACCIVO: Okay. Is going to periscope depth an evolution with risk?
FT1 SEACREST: Of course.

COMMANDER CACCIVO: Okay. So, would conducting a pre-evolution brief for a risky evolution be prudent? You have to answer yes or no. You can't just nod your head.

FT1 SEACREST: Yeah. Yes.

COMMANDER CACCIVO: Okay. Did you -- you said -- I don't know if you actually answered these questions. Are there more -- were there more people in control when you did -- with all the civilians, as you did the periscope depth evolution and emergency blow than there were at battle station? I know you have described it.

Would you say there were more or less than when you go to battle stations?

FT1 SEACREST: I'd say --

COMMANDER CACCIVO: Or about the same?

FT1 SEACREST: -- about the same, a little bit more, maybe just a couple people more. Yeah.

COMMANDER CACCIVO: Okay. Where -- where does the quarter master get his data for ESGN?

FT1 SEACREST: Off the control.

COMMANDER CACCIVO: It's in control?

FT1 SEACREST: Yes.

COMMANDER CACCIVO: Okay. What is the normal periscope search routine? What is the normal search routine at periscope depth?

FT1 SEACREST: After the OOD has called no close contact?

COMMANDER CACCIVO: After.

FT1 SEACREST: After? You would do a 360 low, and then you'd start your high power in your quadrants, zero to 90 and 360 to 90 to 180 to 360 and 180 to 270, 360, 270, to a 360.

COMMANDER CACCIVO: So, to complete an entire high-powered search, 360 degrees, how long would that take me?

FT1 SEACREST: It would take a couple minutes. Actually about -- I believe it's greater than three minutes.

COMMANDER CACCIVO: So, to do one complete high-powered search would take about three minutes?

FT1 SEACREST: Yeah.

COMMANDER CACCIVO: So, to do two complete searches would take six minutes?

FT1 SEACREST: Are you talking high powered on each one?

COMMANDER CACCIVO: Two high-powered searches?

FT1 SEACREST: Yeah. If I remember the times

right.
COMMANDER CACCIVO: Would you say it was at least two minutes?
FT1 SEACREST: Yeah.
COMMANDER CACCIVO: So, if we call -- would you be willing to say it was two to three minutes?
FT1 SEACREST: Two to three minutes to do a high-powered search.
COMMANDER CACCIVO: So, to do two high-powered searches would be four to six minutes?
FT1 SEACREST: Four to six.
COMMANDER CACCIVO: How many high-powered searches did you do at periscope depth? How many did the OOD do?
FT1 SEACREST: The OOD did the initial no-close contacts, and the CO took the scope.
COMMANDER CACCIVO: Did the CO do any high-powered searches?
FT1 SEACREST: I believe only down the bearings of the contacts.
COMMANDER CACCIVO: So, did anybody do a complete periscope search?
FT1 SEACREST: To my knowledge, I'd have to say no.
COMMANDER CACCIVO: So, you say the officer of the deck did the initial sweeps required to report no close contacts, --
FT1 SEACREST: Right.
COMMANDER CACCIVO: -- and at that point, the CO took the scope?
FT1 SEACREST: Correct.
COMMANDER CACCIVO: So, was there an aerial search done?
FT1 SEACREST: He went into his aerial search, and I think he only got one and a half spins on the scope, maybe two, and then the CO took the scope.
COMMANDER CACCIVO: So, Mr. Coen never did any of the high-powered searches?
FT1 SEACREST: No. He had never gotten the scope back after the CO took it.
COMMANDER CACCIVO: And did the CO do any searches -- you said the CO did searches down the bearings or where the contacts were only?
FT1 SEACREST: He had initially done, you know, a quick -- did a 360-degree.
COMMANDER CACCIVO: A low power or high power?
FT1 SEACREST: I imagine low power. It's hard to tell on the perivis unless you're watching

them, watching them change the magnification.
COMMANDER CACCIVO: Okay.
FT1 SEACREST: So, -- but I know when he did his high powered, he did do a high powered down the -- down in the northeast area.
COMMANDER CACCIVO: Okay. Did you ever work out an expected number of divisions for the officer of the deck before you went to PD or in your mind for what you expected to see for Sierra 13?
FT1 SEACREST: No, sir.
COMMANDER CACCIVO: Would you normally do that for an expected visual contact?
FT1 SEACREST: Hmm. Normally, no. I've never done that before.
COMMANDER CACCIVO: You never worked out in your mind prior to going to PD how many divisions you expected to see on a contact?
FT1 SEACREST: Based on the range we had in Fire Control? I mean, that's what I'm saying.
COMMANDER CACCIVO: It's really yes/no.
FT1 SEACREST: Well, it's not really yes/no because I do this so many times, that you're asking me to answer a question that I've come to PD hundreds of times, --
COMMANDER CACCIVO: Right.
FT1 SEACREST: -- and you're asking do I do it every time?
COMMANDER CACCIVO: I didn't say that.
FT1 SEACREST: You said is it expected?
COMMANDER CACCIVO: Would you expect to, when you're going to PD, to determine the number of divisions that you would expect to see prior to going, so that you know whether the contacts range is different than what you expected when you got there?
FT1 SEACREST: Personally, no, I don't do that.
COMMANDER CACCIVO: Is it -- is it -- is it required?
FT1 SEACREST: No.
COMMANDER CACCIVO: Is it recommended per the employment manual?
FT1 SEACREST: Is it recommended per the employment manual? Not to my knowledge. I've never read it before.
COMMANDER CACCIVO: Okay. I have no further questions.
LT. HEDRICK: Lt. Hedrick. Just a couple points of clarification, go through some of the Navy terms that were used, I think, for the first time.

Mental gym is a Navy term, just referring to thinking through in your head bearing rates and speeds of own ship and coming up with some type of analysis for what the contact's doing. That's all referred to as mental gym.

TMA, target motion analysis. That's what you're doing when you do mental gym most of the time.

Faster turns. That's referring to turning the shaft faster, making the ship go faster through the water or using a larger rudder and turning the ship and Azimuth faster, depending on contacts.

Elkland range is that process of analyzing bearing rates and own ship speed perpendicular to the target bearing speed across the line of sight, doing that analysis to come up with a range.

ESGN is the electrostatic gyroscopic navigator. That is the inertial navigation system that the submarines uses.

Initial sweeps for no-close contacts refers to a relatively rapid six-to-eight-second sweep of 360 degrees in Azimuth three times. The purpose of three times is that should cut -- you should ensure you get a decent look down all the bearings in low power.

If you don't in those three sweeps, you would expect to stop and make sure that any sector that you felt was covered up by wave slap every time looked good, and then you would call the no-close contacts, not to be confused with a routine periscope search, which is a sequence of 360-degree searches in low power followed by a 90-power -- 90-degree search in high power.

You alternate the high-powered quadrants such that after you go through that cycle four times, you would have covered all the quadrants in high power. Nominally, each one of those searches takes about 45 seconds.

MR. ROTH-ROFFY: Thank you for that clarification. This is Tom ROTH-ROFFY. What I'd like to do right now is take a break, about five minutes. If you'd like to use the head or have a cigarette, anybody else need to visit the restroom. So, it's now about 1717.

(Whereupon, a recess was taken.)

MR. ROTH-ROFFY: We are on. We're back from our brief break. The time is 1746, and we're continuing our interview of Petty Officer Seacrest.

I believe we're going to go ahead and make another round and give the opportunity for all the interviewers to ask a second set of questions. I just

have a couple more questions for you.
What is a BRA 34? You mentioned that.
FT1 SEACREST: That's an antenna, radio antenna.
MR. ROTH-ROFFY: A radio antenna for transmitting and receiving?
FT1 SEACREST: Transmitting and receiving.
MR. ROTH-ROFFY: Okay. Could you explain what the difference is -- and you've only done part of it -- between the Number 1 and the Number 2 scope?
I understand the numbers -- only the Number 2 scope has the -- the cameras, the ESM, and what else is the difference between Number 1 and Number 2 scope?
FT1 SEACREST: The Number 1 scope has a higher height of eye. The Number 2 scope has -- will go to 24 times magnification where the Number 1 scope will only go to 12. Number 2 scope has a doubler on it, both sides are beveled on it, and the Number 2 scope is torque-assisted, meaning it's got to help with this.
CDR CACCIVO: Do you have a Type-8 on the Number 1 scope?
FT1 SEACREST: No. We have a Type 2-F.
CDR CACCIVO: 2-F
FT1 SEACREST: Yeah. Basically those are the -- what I've said before and those -- those are the --
MR. ROTH-ROFFY: And why would -- for searching the surface for contacts, why would -- why would one select Number 2 over Number 1? I understand probably for the ESM capabilities.
FT1 SEACREST: ESM capabilities, the greater magnification. Those two.
MR. ROTH-ROFFY: I understand the recording equipment you've referred to as the Tac 3. Was that in operation or was it not in operation?
FT1 SEACREST: The Tac 3, which is a -- it's a Hewlett-Packard computer. It was turned off. The computer was physically on, but there were -- there was nobody there actively tracking the contacts at the time.
MR. ROTH-ROFFY: Now, does a Tac 3 also function as a recording device, for example, for making an archive of the data that you acquired?
FT1 SEACREST: You can archive the data.
MR. ROTH-ROFFY: And was that function turned on at the time?
FT1 SEACREST: No, sir.
MR. ROTH-ROFFY: Is it typical for you to activate that function of the Tac 3?

FT1 SEACREST: No, sir.
MR. ROTH-ROFFY: There's no requirement to -- to turn it into the record mode?
FT1 SEACREST: No.
MR. ROTH-ROFFY: And who's responsible for operating and maintaining, turning it off and on and etc.?
FT1 SEACREST: There are two Tac 3s on the boat, one in Sonar, one in Fire Control. We are in charge of ours, and Sonar are in charge of theirs.
MR. ROTH-ROFFY: Okay. So, it would be your -- during your watch period, you'd be the one that would take care of that?
FT1 SEACREST: Right.
MR. ROTH-ROFFY: Okay. The SNR of the targets or the contacts, how would that be reflected in your information that you see? How would you know whether you had a high or low SNR contact?
FT1 SEACREST: Actually shows up on my -- on the upper right-hand corner of my screen.
MR. ROTH-ROFFY: So, you have a display that actually says SNR?
FT1 SEACREST: I have a display that displays the contact data coming in from Sonar, the SNR, DE angle, bearing.
MR. ROTH-ROFFY: And -- and how does that SNR affect how you evaluate the contact?
FT1 SEACREST: It doesn't play heavily into the way I evaluate a contact, but if you have a stronger positive SNR, plus whatever, that usually means it's a little bit louder. But like I said, it's also based on background noise.
MR. ROTH-ROFFY: And just as a reference, what actual numerical values are considered stronger and which are considered weaker?
FT1 SEACREST: I would say anything greater than plus five is considered stronger.
MR. ROTH-ROFFY: How about on the weak end? What -- what would you consider a weak?
FT1 SEACREST: Anything less than that, negative. You'll see Negative Number 1.
MR. ROTH-ROFFY: Negative is -- is -- is considered a weaker --
FT1 SEACREST: Yeah.
MR. ROTH-ROFFY: Could you describe your qualification process? What's --
FT1 SEACREST: For fire control?
MR. ROTH-ROFFY: For fire control men, yeah. How many qual cards are involved, and how long does it

take?

FT1 SEACREST: It is the longest one on the base, and it takes the average FT, a junior guy, especially now, who are getting out of school, almost a year to qualify for watch.

If he's gone through a -- some type of fire control operator course, which they're now putting on the tail end of our school, I believe, if he happens to get that, maybe a little less, but mainly entails the -- the thorough knowledge of every piece of equipment, power supplies, how they operate, how they're cooled or power's isolated to them, to tactics as far as weapons go for all the different weapons we can carry, and what they can do.

We read -- the first two pages alone are nothing but reading of various NWPs and Tech manuals and other documentation that is pertinent to our watch.

You have to stand a minimum of six UIs being fire control technicians. What else? The operations of the periscopes. You have to stand a minimum of three sonar UIs, minimum of three FTOW UIs.

Every procedure we perform with weapons and the fire control system. The Tac 3 is in there. It's basically -- basically it.

MR. ROTH-ROFFY: Okay. So, the tracking of contacts is actually only a small part of your total overall qualifications or is that -- I mean, is that essentially the bulk of it?

FT1 SEACREST: Learning to track a contact is -- it's a big part of it. It's a major part of it. That, and the weapons, I'd say, are the major focus of that qual card.

MR. ROTH-ROFFY: Okay.

FT1 SEACREST: The learning of the equipment and how to operate it or how power supplies to it, and how it works internally, that comes with time and knowledge, and fixing it and when it breaks, fixing it.

MR. ROTH-ROFFY: So, do you actually repair your own equipment as well as operate it?

FT1 SEACREST: Yes, I do.

MR. ROTH-ROFFY: Okay. So, that's -- that's a significant undertaking in itself, to be able to -- to know the electronics, to be able to repair that equipment, I would imagine.

Has it always been that the same rate operates and maintains the equipment or has that been combined at some point?

FT1 SEACREST: That was actually -- well, back in the early '80s, they had DSs on the submarines,

and the DSs took care of the computer equipment, and the FTs just took care of the fire control equipment. They combined the two. So, now we take care of -- FTs take care of the computer and the fire control.

MR. ROTH-ROFFY: And if you had to estimate how much mental energy it takes to maintain it as opposed to operate it, which is harder for you as a fire control man?

FT1 SEACREST: Harder for me? Maintaining it.

MR. ROTH-ROFFY: For the typical guys, is it pretty intense to keep that stuff going when it breaks down, troubleshoot it, repair it, keep it -- is that the harder part of it than -- than to operate it?

FT1 SEACREST: At times, yes, especially BLS.

MR. ROTH-ROFFY: Can you talk anything about active sonar, and how that -- how that works for -- for tracking your targets?

FT1 SEACREST: You get better ranges.

MR. ROTH-ROFFY: Better ranges --

FT1 SEACREST: More accurate.

MR. ROTH-ROFFY: -- typically?

FT1 SEACREST: Yeah. Other than that, I -- that's about all I really feel that I --

MR. ROTH-ROFFY: So, if you had an active or passive target that you were tracking, would you be able to go active and -- and get a better solution on it by doing that, generally speaking?

FT1 SEACREST: Generally, yes, you could.

MR. ROTH-ROFFY: Are there any disadvantages to going active?

FT1 SEACREST: Well, being a submarine and what we do, yeah. You give yourself a limit. They know exactly where you're at.

MR. ROTH-ROFFY: But for doing local operations during peacetime, is there -- would that be a disadvantage?

FT1 SEACREST: Would it be a disadvantage?

MR. ROTH-ROFFY: I mean, are you concerned about giving your position away in local operations during peacetime?

FT1 SEACREST: Am I concerned?

MR. ROTH-ROFFY: Is the Navy concerned? I don't know if you can speak to that or not.

FT1 SEACREST: I don't -- the Navy, I don't know. I can't say the Navy is concerned about that.

MR. ROTH-ROFFY: Commander, could I ask you for a clarification on that? Going active on a submarine in local operations in peacetime, is that

something that you don't want to do for giving your position away?

COMMANDER CACCIVO: This is Commander CACCIVO. Active is a -- is a sensor that's available to the CO for training. We would most likely use it in a local ops area for training, although in the Cold War, we tended not to do that because we had the potential even in our local op areas for people to detect our sounds.

We feel confident that we can do that now, and the training value is sufficient that we do that. It is typically the sonar men will work that into their schedule to go out and do active propagation planning, to figure out the best environment, to set aside some time to get officers of the deck in there.

Evaluating an active ping and its return is a fairly complex evolution. It involves a lot of -- a lot of disadvantages. The FTOW, as he said, deals strictly with the range aspect, whereas the sonar techs can probably elaborate with you about the fact that that signal that goes out can create a lot of clutter.

Anything can give you a return, including the bottoms here in Hawaii, which are known for being an active return, these are a nightmare, but the features in the bottom here, especially in the local vicinity, especially south of Maui, can be very, very difficult for actives in the water, reverberation. All sorts of things can give you false returns.

So, you may be looking down what you think to be -- you have three contacts, and you look down, and you're trying to get a range of one, and you go active, and now you may get several, as many as eight to 10, returns out there, and, so, the problem becomes now if you do this at a critical time, now you -- you've now added to -- you've now increased the complexity of your problems.

So, if you're at a go-no point, where you're trying to figure out whether you want to go to periscope depth, if you're trying to figure out whether you want to shoot a weapon, conceivably I could go active on a guy before I shot him, if I didn't think he would detect it, then I may now cause a whole lot of more confusion, anxiety and additional problems to my combat control party where I did not have them.

I may have had a range that I thought was within a finite, as I asked FT1 about a certain range bracket, and now, by adding all this additional data, I may now have compounded my problem if it doesn't come out exactly where I am. Just because it's on the same

bearing, it may not be the same contact because my sound may have been reflected back to me before I got the contact.

So, you can see, yes, the short answer to your question is yes. There are no restrictions. It is encouraged to conduct active training for the sonar operators, and we're going to pull their qual cards over across the street.

I'll give you a firm answer tomorrow, but I would say -- I can say pretty much beyond a shadow of a doubt, it's actually a qualification requirement, but I have been a sonar supervisor. I have worked that into my training for sonar officer. I have worked that into my training plans. I have done active on a routine basis. I have done active against surface ships. I have done active against submarines to ensure my operator's prepared to do that.

So, the big consideration --

MR. ROTH-ROFFY: Okay.

COMMANDER CACCIVO: -- is I would say in the local operators, you're not as -- you're not overly concerned about -- we are not concerned about counter detection here. Restraints they may have imposed on us years ago, as many as 10 years ago or 15 years ago, are not imposed on us anymore.

But the question really comes down to the best tactical employment of all sensors, and at that point in time, would it help or possibly hinder your problem? So, -- and I think the sonar techs alluded to earlier today, by going to active with two -- only two CDCs available, you have to go up a lot of capability to get -- to get a feature that may not prove useful.

MR. ROTH-ROFFY: Okay. Thank you for that.

LCDR SANTOMAURO: CDC?

COMMANDER CACCIVO: Oh, sorry. Controlled Display Console, which are actually the work stations that are in Sonar.

LCDR SANTOMAURO: So, to be more specific, you would have to drop your -- your class -- your class work share station in Sonar, so you basically lose that console in order to -- to shift to that mode, and it takes about three to five minutes to line up in order to perform that and utilize that.

FT1 SEACREST: So, you would lose your ability to get -- you would basically lose your ability to do shaft rpm and turn count, which is what we used to get speed. So, it's a trade-off. Everything's a trade-off here.

MR. ROTH-ROFFY: Okay. For Petty Officer

Seacrest, do you know anything about this type of radar that's mounted on the sail? I believe it's been referred to as the under ice active sonar --

FT1 SEACREST: Sonar.

MR. ROTH-ROFFY: -- sonar -- sorry. Sonar.

FT1 SEACREST: BQS-13.

MR. ROTH-ROFFY: What is it called?

FT1 SEACREST: BQS-13.

MR. ROTH-ROFFY: Okay.

CDR CACCIVO: 13 or 15?

FT1 SEACREST: We use a 15.

CDR CACCIVO: Okay.

MR. ROTH-ROFFY: BQS-13 or 15?

FT1 SEACREST: Yeah.

CDR CACCIVO: Why don't you just stick to noun names? You'd probably be better off anyway.

MR. ROTH-ROFFY: Okay.

FT1 SEACREST: It is a 15, yeah.

MR. ROTH-ROFFY: Can you talk about the capabilities of that for tracking targets?

FT1 SEACREST: I have no idea about the capability. I've never operated it. I couldn't tell you.

COMMANDER CACCIVO: This is Commander CACCIVO. That would not be a piece of gear that would fall under his qualification or his use, and I don't think, now I'm really going back in my knowledge, I don't think you can get a range automatically in the fire control from the -- from a BQS-15.

FT1 SEACREST: Not on a busy one [BSY-1].

COMMANDER CACCIVO: No. I think --

LT. COMMANDER SANTOMAURO: And I have some information because I just asked to go out and get some information on this for the other investigator team. This is Lt. Commander SANTOMAURO.

In order to utilize the HF console for inside the control room, basically they're limited in Azimuth and range basically, and, so, it's very limited use. It's for under ice or mine avoidance. Basically just coming to periscope depth basically would be the only reason, and you could look basically straight up on -- on that, unless you actually lost a CDC in Sonar in order to give that capability to Sonar, and then you have a tough trade-off.

I think you have more modes of operation --

CDR CACCIVO: You're saying you can do --

LT. COMMANDER SANTOMAURO: You are talking about the HF sonar? Is that what we're talking about?

CDR CACCIVO: Yeah. We're talking -- you're

saying you can display -- you're saying display BQS-15 in Sonar? I don't think so.

CDR CACCIVO: The work station is out in control. When you are on the submarine, the -- the ballast control panel's here. The emergency ballast control flow activators are here. There was a console right behind it with two big displays. That was it. That's where the operator would sit. The data would be available to him. He could call -- he could call out a range, but remember the ranges we're talking for protection here are, I would say, with accuracy are about 2,000 yards at most.

So, I have seen ranges for maybe 2,500, maybe on a good day and the right ship's angle and all the SVPs are lined up right and a loud target. It's actually an active system. So, I mean, maybe 3,000 yards. I mean, we're -- we're very close range.

MR. ROTH-ROFFY: Thank you for that.

CDR CACCIVO: I didn't know how much you wanted.

MR. ROTH-ROFFY: That's fine. So, would there -- who would actually man that -- that display unit on that -- under ice sonar? Would that be fire control man or would it be somebody else?

FT1 SEACREST: That would be a sonar guy.

MR. ROTH-ROFFY: A sonar guy would come out and man it. Okay. I think that's about all I have for you now. I'd like to pass the --

MR. WOODY: Bill WOODY with the NTSB. Were you on watch with somebody at the day the vessel came -- did the emergency surface?

FT1 SEACREST: What do you mean by "with somebody"?

MR. WOODY: Well, I see another fire control man.

FT1 SEACREST: There wasn't another fire control man in control.

MR. WOODY: In control.

FT1 SEACREST: He was --

MR. WOODY: Okay.

FT1 SEACREST: -- had nothing -- he was not participating at all in the evolution. He was just there.

MR. WOODY: So, -- so, he was there, but you were the only fire control man on watch then. Okay. Looking back, would it have been -- would you -- could you have used another fire controlman to assist you with like keeping the CEP plot?

FT1 SEACREST: Maybe the CEP. Contacts, no.

MR. WOODY: Now, with regard to the CEP plot, we've had a lot of discussion on it, but my recollection is that all the course -- the ship's course changes were -- were plotted, but the -- the contact information from the Sonar was not plotted.

FT1 SEACREST: There shouldn't have been anything on the CEP from the time we finished -- from the time we started angles and dangles until the incident happened.

MR. WOODY: Hm-hmm. Is there any other paper display that gives bearing drift, for example, to show whether a contact has a right bearing rate or a left bearing rate, besides the CEP plot?

FT1 SEACREST: A paper display?

MR. WOODY: Hm-hmm. We know, for example, that the electronic display that the -- the OOD had was not working. Was there any other source of information that would show him pictorially bearing drift?

FT1 SEACREST: Other than looking at the fire control, --

MR. WOODY: For example, was the DRT running or anything like that? Did they have plots on that?

FT1 SEACREST: No.

MR. WOODY: We heard mention of the Elkland plot. I think you said you could do an Elkland --

FT1 SEACREST: Elkland range.

MR. WOODY: Eklund range. Okay. How long does something like that take?

FT1 SEACREST: However long it takes to do two maneuvers.

MR. WOODY: Okay. Did you do one that day with all the maneuvers you had?

FT1 SEACREST: Did it on -- our Fire Control System does it automatically.

MR. WOODY: It did it on the computer but not on the paper?

FT1 SEACREST: I usually back myself up. I look at the numbers, see if the numbers make sense, and I go to put them in the Fire Control System.

MR. WOODY: Let me -- we've had a lot of questions about your review of the perivis. Did I pronounce that correctly? Okay. Can you tell anything about the nature of visibility that day, from that particular television screen? Was it good, bad? Was there any haze? Could you see the horizon clearly, for example?

FT1 SEACREST: Well, it's a black and white screen for --

MR. WOODY: Indeed. I saw that.

FT1 SEACREST: -- first of all, and my recollection, I would say your distance to the horizon on that day was probably about 8 to 9,000 yards.
MR. WOODY: What was the -- was the -- was there any limitation of the horizon that day? Was it --
FT1 SEACREST: The sea state.
MR. WOODY: The sea state?
FT1 SEACREST: Yes.
MR. WOODY: So, you could clearly see the horizon?
FT1 SEACREST: Yes.
MR. WOODY: It wasn't obscured by fog or mist or anything of that nature?
FT1 SEACREST: No. There was nothing like that.
MR. WOODY: Was there any -- no mist?
FT1 SEACREST: No, not at all. Truthfully, it'd be hard to tell in that black and white screen.
MR. WOODY: You mentioned that the captain sighted down the bearings, the sonar bearings. How did you know that? How were you able to ascertain --
FT1 SEACREST: OSDS, right here.
MR. WOODY: Okay.
FT1 SEACREST: There's an OSDS console right here. The numbers are about yea big, and I had it selected to the Number 2 scope.
MR. WOODY: And what does -- what does that OSDS stand for?
FT1 SEACREST: Own Ships Data -- I can't remember what the other is. Like Own Ships Display something.
MR. WOODY: What is --
FT1 SEACREST: Own Ships Display System.
MR. WOODY: Does the captain turn the scope? You could see what he was looking at?
FT1 SEACREST: Oh, yeah. Bearings.
MR. WOODY: And he stopped on the sonar bearings?
FT1 SEACREST: Yes.
MR. WOODY: That's how you knew that?
FT1 SEACREST: Yes.
MR. WOODY: Okay. That's all the questions I have. Thank you. Except for some personal questions at the very end, take about three seconds. We have a drug sheet. I think it's on the boat some place.
MR. STRAUCH: This is Barry STRAUCH with the Safety Board.
Did you -- how did you feel at the time in

terms of your rest?
FT1 SEACREST: Oh, I was well rested.
MR. STRAUCH: Okay. During angles and dangles, you lost or Sonar lost Sierra 10, is that correct?
FT1 SEACREST: Correct.
MR. STRAUCH: Sierra 10 was regained at some point?
FT1 SEACREST: No.
MR. STRAUCH: Okay. Was that unusual?
FT1 SEACREST: No, sir.
MR. STRAUCH: It happens?
FT1 SEACREST: Yes.
MR. STRAUCH: Why is that? Why does that happen?
FT1 SEACREST: They're going away from us.
MR. STRAUCH: Okay. You said you'd been off before in the estimates by thousands of yards.
FT1 SEACREST: Oh, yes.
MR. STRAUCH: About what -- how often does that happen to you? What percentage?
FT1 SEACREST: Quite often.
MR. STRAUCH: Quite often?
FT1 SEACREST: Yeah.
MR. STRAUCH: Like between 25 and 50 percent of the time, do you think? More than 50 percent?
FT1 SEACREST: More than 50 percent of the time.
MR. STRAUCH: What do you attribute that to?
FT1 SEACREST: Range error.
MR. STRAUCH: Range error in Sonar?
FT1 SEACREST: Sonar bearings, all kinds of things. Sonar bearing coming in faintly I mean, the sonar bearings would be the main one. Honestly, when you're shooting a torpedo at something, you can be off by a few thousand yards and still hit it.
MR. STRAUCH: Because the weapon's pretty smart?
FT1 SEACREST: Oh, yeah.
MR. STRAUCH: Bill asked you about the visibility. What were the lighting conditions like?
FT1 SEACREST: It's hard to tell on the black and white screen, but fog cover, I would say about -- it wasn't 100 percent cloudy, but it was pretty cloudy, 75 percent, that day, when we came out of PD.
MR. STRAUCH: Okay. You said the captain stopped and looked at the bearings --
FT1 SEACREST: Yes.
MR. STRAUCH: -- with the periscope. About

how long did he -- did he stop?
FT1 SEACREST: Do the scan?
MR. STRAUCH: Yeah.
FT1 SEACREST: About 10-15 seconds.
MR. STRAUCH: There was no pre-evolution brief before reaching periscope depth, is that correct?
FT1 SEACREST: Correct.
MR. STRAUCH: Had that happened before?
FT1 SEACREST: Yes, we've done that before.
MR. STRAUCH: Whether -- let me rephrase the question. Had it happened before where there was no briefing when -- when there was supposed to be a briefing?
FT1 SEACREST: When there was supposed to be a briefing? Not that I recall.
MR. STRAUCH: Was this a required briefing?
FT1 SEACREST: To go to periscope depth?
MR. STRAUCH: Yeah.
FT1 SEACREST: That, I'm not sure of, required or not to go to periscope depth.
MR. STRAUCH: In all the times that you've done that, and it sounds like you've done it quite often, has there always been a briefing before you went to periscope depth?
FT1 SEACREST: No.
MR. STRAUCH: What percentage of the time is -- are there briefings?
FT1 SEACREST: Greater than 90 percent of the time. It's only a small percentage that, you know, we might not.
MR. STRAUCH: Okay. Was there any reason given for not having the briefing?
FT1 SEACREST: No.
MR. STRAUCH: What was your interpretation as to why there was no briefing?
FT1 SEACREST: Well, my interpretation is we were just coming to periscope depth to check the area clear and go look. You know, the purpose of our briefings have always been to brief the other watch standers on what our purpose for going up there was or what we wanted to accomplish. Mainly, that's, you know, hey, radio, we want to transmit these messages, and we want a copy of this broadcast while we're up there.
MR. STRAUCH: Hm-hmm.
FT1 SEACREST: The -- they will ventilate the ship, and we're going to do sanitaries while we're up there, too. We do that, and we have control of that stuff through the officer of the deck, and any other

evolutions that he might want to perform while we're up there.

In this case, we didn't perform any of those. We just came up.

MR. STRAUCH: So, by not having a briefing, because you weren't going to do these evolutions, what you're saying is you didn't miss anything really?

FT1 SEACREST: No.

MR. STRAUCH: Okay. Have you -- how often does it occur that there's a difference in interpretation between Sonar -- between what Sonar's picking up and what the periscope is showing?

FT1 SEACREST: As far as the contacts Sonar picking up, and then what we actually see?

MR. STRAUCH: Right. Or when not picking up, and the other -- and the other's picking.

FT1 SEACREST: Well, I don't know. Hard to say. I mean, we picked up contacts on the periscope that Sonar hadn't, you know, seen on their screens.

MR. STRAUCH: Which is --

FT1 SEACREST: Sometimes sea state when we're at PD, it's a little harder to see the contacts coming in. Depending on where they're coming in on the sphere itself, what's the sound hitting the sphere, you know?

MR. STRAUCH: Which do you feel is more accurate?

FT1 SEACREST: Periscope.

COMMANDER CACCIVO: This is Commander CACCIVO. Can we clarify what you mean by accurate, more accurate or what?

MR. STRAUCH: I'm sorry. Which do you have more confidence in at picking up --

COMMANDER CACCIVO: Define that. More confidence in what?

MR. STRAUCH: In detecting something. Detecting a target.

FT1 SEACREST: Detecting a target?

MR. STRAUCH: Yeah.

FT1 SEACREST: Periscope.

MR. STRAUCH: Periscope. You have more confidence in the periscope?

FT1 SEACREST: You can't beat looking and seeing with your eyes.

COMMANDER CACCIVO: This is Commander CACCIVO again. I don't think we're answering the question the way we're asking it, though. I mean, are we talking about initial detection or are we talking about seeing something we know is within our range of visual capability?

MR. STRAUCH: The question --

COMMANDER CACCIVO: I think I know what you're driving at, but I'm afraid the answer is -- is not going to answer that question because if it's within his visual range of field, obviously a 100 percent of the time, I'll take a look at it, and the scope is more accurate, okay, because it gives you the best bearing. Visual bearing is always going to be the best.

But detecting a target on sonar, sonar can be -- can be dead on for detecting a contact, detecting a guy who's at 20-30,000-40,000 yards, no way you can get that visually, but I can probably get that on sonar pretty reliably, depending on the acoustic environment.

MR. STRAUCH: My question's not your confidence.

FT1 SEACREST: Yeah. I agree with what the Commander said. He's right. The sonar will pick up contacts way farther away than we can see them, but if we're talking visually being able to look at a contact, I would choose the periscope over sonar as far as the bearing is concerned.

MR. STRAUCH: Hm-hmm. And you said you've been -- encountered situations where you've seen something in a periscope that Sonar missed?

FT1 SEACREST: Yeah.

MR. STRAUCH: Is that more likely or is it more likely the other way around?

FT1 SEACREST: It's more likely the other way around. It doesn't happen very often.

MR. STRAUCH: When it does happen, why does it generally happen?

FT1 SEACREST: Could be the acoustic background, very noisy out there, lot of biologics, you know, slow-moving trawlers, usually what gets missed when you're up there. Just moving so slow, they blend in with all the other background noise. It's hard to pick them out of that.

COMMANDER CACCIVO: Okay. I mean, you're getting an FT's impression of an answer, which is good. He talked about things like that, but there's a whole plethora of reasons. I mean, contact could be dead in the water and not emitting any sound that would be noticeable by Sonar, and therefore he'd detect it at periscope depth.

When we talk about contacts, we talk about things such as logs in the water, too, or objects that are just sitting there. Those objects don't emit any sound. Biologics can mask the sonar picture. The

environmental acoustics can drive the sound -- the sonar signal down away from the submarine sonar, so they're not able to detect it, in which case I may be able to get it visually before I would get it acoustically.

So, there are -- I mean, there are -- there are a lot of reasons why you could do it. The norm is to hold a guy on sonar well before you gain him visually because the sonar rays are much -- are very sensitive, and then you gain him visually.

So, probably would you agree, 95 percent of the time, at least, --

FT1 SEACREST: At least.

COMMANDER CACCIVO: -- or a significantly high percentage of time, you go to periscope depth on sonar contact, you hear and see, it's not the norm to come up and find guys that you didn't -- you didn't hold before you got there, but it can happen, and there are a number of environmental reasons why.

MR. STRAUCH: Somebody said in the control room that they felt there was -- I don't remember what the exact words were, but there were no contacts nearby. Was that --

FT1 SEACREST: Officer of the deck.

MR. STRAUCH: Officer of the deck said that?

FT1 SEACREST: He announced "there's no close contacts".

MR. STRAUCH: Okay. And then, what happens after he says that? Then -- I'm asking you.

FT1 SEACREST: What generally happens after that?

MR. STRAUCH: Well, what happened here?

FT1 SEACREST: What happened here is that he went into his aerial search, and he made a couple of sweeps on his aerial search, and then the CO had taken the scope.

MR. STRAUCH: Okay. Is that the norm? For him to say that, and then -- and then look through the periscope and then for the CO to look through the periscope? Is that the way it's done?

FT1 SEACREST: The norm to say no close contacts, then do the aerial search? Yeah. That is the norm. It's not the norm for the CO to take the scope before he's done that.

MR. STRAUCH: What is the norm?

FT1 SEACREST: The norm is that he completes his aerial search, and he'll announce that he's completed his aerial search, and then he'll start into his -- his regular search pattern with the high-powered

-- standard high-powered search.
MR. STRAUCH: But he didn't do that?
FT1 SEACREST: Officer of the deck? No.
MR. STRAUCH: The CO did it?
FT1 SEACREST: The CO took the scope.
MR. STRAUCH: The CO -- but the CO did not do the same kind of search that the officer of the deck would have done had he --
FT1 SEACREST: No.
MR. STRAUCH: And we've already established that? Am I asking something -- okay.
INTERVIEWER: I think you're doing it quite well.
MR. STRAUCH: Okay.
FT1 SEACREST: We did cover this already.
MR. STRAUCH: We did?
FT1 SEACREST: Yes, because Lieutenant Hedrick went into explanation on how we do the standard scope searches.
LT. HEDRICK: But the scope, I don't recall.
MR. STRAUCH: Okay. What -- what exactly was not done that was done during the norm in terms of the use of the scope?
FT1 SEACREST: The aerial search wasn't completed.
MR. STRAUCH: Okay.
FT1 SEACREST: And then, I can't 100 percent testify that the CO did a standard high-powered search.
MR. STRAUCH: Would you have known that from looking at the perivis?
FT1 SEACREST: Yes, I should have been able to tell when he was --
LT. HEDRICK: Very astute FTOW looking at the perivis continually, focused on that, could probably tell you that, when -- it would be very difficult to be able to -- for him to quantifiably say he did those searches based on looking at the perivis because he indicated earlier to my question that's hard to tell the ships look at the perivis, unless you have a contact.
If you have a contact in the field of vision, it's very easy to tell the ships because they get real big and real small, okay, but that would be tough to do.
MR. STRAUCH: What was the nature of the captain's taking over? Did he say something? Was there a gesture? Did the officer of the deck say something?
FT1 SEACREST: No. He walked up to the

officer of the deck, and he said, "Let me take the scope." Gave it to him.

MR. STRAUCH: Okay. All right. I have no further questions.

LT JOHNSON: Did I understand you correctly when you said that you'd been different places, you'd track upwards of 30 contacts at a time?

FT1 SEACREST: Yes.

LT JOHNSON: You have?

FT1 SEACREST: Yes.

LT JOHNSON: And did you -- did you track all those contacts by yourself?

FT1 SEACREST: No.

LT JOHNSON: How many FTs does it take to track that many?

FT1 SEACREST: Two.

LT JOHNSON: Two? You can keep track of what, 15, by yourself then or so?

FT1 SEACREST: I've tracked up near 10-12 by myself.

LT JOHNSON: And on this particular day, we were tracking how many?

FT1 SEACREST: At the time, three.

LT JOHNSON: Three contacts. So, I think you said that was not a lot at all. You know, I'm curious as to what you may think, you know, and this is strictly -- and I understand this is your opinion.

Of course, the key question is what happened? But any -- anything you can help us out with that might have caused the -- the -- I'm going to say the ship as a whole to lose track of a contact in all of this. Contributing factors that may have caused Sonar to get their wires crossed or your track to get off or the OOD to lose a picture. Anything that stands our in your mind?

FT1 SEACREST: At the time, no. It seemed like everything was going the way it -- I mean, --

LT JOHNSON: What about in retrospect, looking back? At the time, obviously we think, you know, we're right on top of everything, but now, since everything's happened, you've had a few days to think about it, when you look back on it -- because you guys are driving a big machine out there.

FT1 SEACREST: Yeah.

LT JOHNSON: It does marvelous and wonderful things, and we only have three -- three blips on the screen, and we lose --

FT1 SEACREST: Maybe I could have done stuff a little bit slower. That would be the --

LT JOHNSON: Do you think that there was any significant added confusion with visitors in the control room?
FT1 SEACREST: No.
LT JOHNSON: You don't think that they could have played any part?
FT1 SEACREST: No.
LT JOHNSON: Okay.
FT1 SEACREST: None whatsoever.
LT JOHNSON: Okay. I have no further questions.
COMMANDER CACCIVO: I have one more question. This is Commander CACCIVO.
After you do the safety searches, and you go into the deliberate searches, is it -- is it reasonable to expect the officer of the deck or the commanding officer to look down at threat access at that point, if he believes he may have a contact?
FT1 SEACREST: No.
COMMANDER CACCIVO: Would it be reasonable to believe that if you were going to conduct an emergency surfacing down a bearing to the north, that that would be considered -- I don't want to say threat access because we use that to refer to hostile contacts, but that would be the highest risk access?
FT1 SEACREST: Yes.
COMMANDER CACCIVO: So, would it be reasonable to expect that they would meet after conducting the safety searches? They would look down those bearings and break the periscope search routine?
FT1 SEACREST: Yeah. That's correct sir.
COMMANDER CACCIVO: After you break your periscope, is it common sometimes for the officer of the deck to look at a contact for an extended period, to get a good classification?
FT1 SEACREST: Yes.
COMMANDER CACCIVO: So, if you break from that periscope routine, what are you required to do?
FT1 SEACREST: If you break from --
COMMANDER CACCIVO: If you -- if I -- if I break from my standard routine of 90-degree search and high power, 360-degrees search in low and 90-degree high, if I break from that for an extended period to look at a contact, what am I required to do?
FT1 SEACREST: Safety sweep.
COMMANDER CACCIVO: So, I'm basically required to start my whole safety searches again, --
FT1 SEACREST: Right.
COMMANDER CACCIVO: -- to refresh the

picture?
FT1 SEACREST: Right.
COMMANDER CACCIVO: Okay. Thank you.
MR. ROTH-ROFFY: Okay. Now, we'll turn it back to Mr. WOODY. He'll collect some quick personal data.
MR. WOODY: Bill WOODY, NTSB. Okay. Your age?
FT1 SEACREST: I'm 35.
MR. WOODY: Okay. Height and weight?
FT1 SEACREST: 6'1, 168.
MR. WOODY: Okay. Are you in good health?
FT1 SEACREST: Yes.
MR. WOODY: Are you taking any medications prescribed by a physician?
FT1 SEACREST: No.
MR. WOODY: Do you wear glasses?
FT1 SEACREST: No.
MR. WOODY: And have any events in your life, say in the last month, last few weeks, that were depressing or -- before the accident now, or exhilarating? Any -- any big good news or any big bad news?
FT1 SEACREST: No, none.
MR. WOODY: Okay. And the last thing is, could I get your first name and initials?
FT1 SEACREST: Yes, it's Patrick T.
MR. WOODY: Patrick T. High school grad?
FT1 SEACREST: Yes.
MR. WOODY: Any other -- any other education?
FT1 SEACREST: No.
MR. WOODY: Okay. Thank you very much.
MR. ROTH-ROFFY: Okay. With that, that ends our interview with Petty Officer Seacrest.
(Whereupon, the interview was concluded.)